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ABSTRACT

This report presents data on the occupational and educational experiences of graduates approximately 1 year following graduation based on a nationally representative sample of 16,172 bachelor's degree recipients during the during the 1989-90 academic year. The report is divided into two sections. The first section presents an overview of principal occupational and educational outcomes, and the second section focuses on outcomes for specific major fields of study. Among the study's highlights are the following: (1) 84 percent of the graduates were employed, the rest being unemployed or not in the labor market due to school or other reasons; (2) employment rates were higher among graduates in the professional fields; (3) the unemployment rate at 4.5 percent for graduates was 2 percent less than the general labor force as of April 1991; (4) one-third of the graduates reenrolled for further education within 1 year of graduation; (5) mean annual salaries for full-time employees were higher among professional field majors than among arts and sciences majors; and (6) among graduates employed full time, the mean salary for women was 87 percent of the mean salary for men. Appendices provide detailed tables with standard errors, study technical notes, and definitions. (GLR)

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Occupational and Educational Outcomes of Recent College Graduates 1 Year After Graduation: 1991

Contractor Report

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Statistical Analysis Report April 1993

Occupational and Educational Outcomes of Recent College Graduates 1 Year After Graduation: 1991

Contractor Report

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National Center for Education Statistics

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April 1993

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HIGHLIGHTS

These highlights reflect the status of 1989-90 bachelor's degree recipients 1 year after graduation, in April of 1991.

- Among the total graduates 1 year after graduation, 84 percent were employed (73.8 percent full time and 10.5 percent part time), 4 percent were unemployed, and 12 percent were not in the labor force because of school or other reasons.

- Employment rates were higher among graduates who majored in the professional fields than among arts and sciences majors (90 percent compared with 76 percent).

- Among graduates in the labor force (employed or both looking and available for work), the unemployment rate was 4.5 percent. (In April of 1991 the unemployment rate for the entire U.S. population over 16 and in the labor force was 6.5 percent.)

- Among graduates in the labor force, unemployment rates ranged from 1.0 percent for majors in the health professions to 8.2 percent for history majors.

- Over one-third (35 percent) of the graduates had enrolled in further education within 1 year of graduation. This is the highest rate of enrollment reported in the six cycles of the RCG study (conducted since 1976). Twenty-four percent had enrolled in degree programs beyond the bachelor's degree.

- Of the 16 percent of graduates not employed, 68 percent had enrolled in further education.

- The enrollment rate 1 year after graduation was higher for arts and sciences majors than for professional field majors (46 percent compared to 28 percent).

- The mean salary for full-time employed bachelor's recipients 1 year after graduation was $23,600, and the median salary was $21,000. In constant dollars, this reflects a decline of about 2.6 percent in the mean salary since the 1987 RCG study.

- Mean annual salaries for full-time employees were higher among professional field majors than among arts and sciences majors ($25,300 compared to $21,700).

- Mean full-time annual salaries were highest for majors in the health professions ($31,500) and engineering ($30,900) and lowest for majors in education and humanities ($19,100).

- Among recent graduates employed full time, the mean salary for women was 87 percent of the mean salary for men ($22,000 for women compared to $25,400 for men). Ten years earlier, in the 1981 RCG survey, women's salaries were 79 percent of men's salaries.

- Over three-fourths (76 percent) of the full- and part-time employed graduates reported having jobs related to their major field of study, and 79 percent reported that their job had some career potential.

- Many graduates were in jobs that they reported do not require a 4-year college degree. Forty-four percent of all employed graduates (full and part time) and 40 percent of those employed full time reported that a 4-year college degree was not required for their principal job.

ACKNOWLEDGMENTS

Every study depends on the cooperation and coordination of many people. The survey was performed under the direction of the NCES Cross-Sectional Studies Branch. Roslyn Korb was the branch director and Peter Stowe was the NCES project officer. Michael Cohen was the NCES mathematical statistician.

The survey was performed under contract with Westat, Inc. The Westat project team included Margaret Cahalan, project director; Lucinda Gray, survey manager; Mike Brick, senior statistician; Jacqueline Severynse, statistician; Peter Ha, Gail Wisan, and Steven Schweinfurth, analysis and sampling programming; Susan Hein, graphics; Sylvie Warren, word processing; Carol Litman, editor; Jacque Wernimont, Royce Gibson, and Nancy Hopper, CATI development; Karen Molloy, Telephone Research Center coodinator; and Stephanie Campbell and Dotty Pike, data preparation. The study benefited from the corporate support and encouragement of Westat vice president Lance Hodes.

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We especially acknowledge with gratitude the 400 higher education institutions that provided the information necessary to draw the sample of graduates and the 14,000 graduates who took time to respond to the survey and to provide the information upon which this report is based.

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Introduction

The number of bachelor's degrees awarded by U.S. colleges and universities in 1990 rose for the thirteenth straight year, to a record total of 1,049,657.[1] About 53 percent of bachelor's degrees were awarded to women and 47 percent to men. Degrees for women increased by 9.7 percent between 1986 (the year of the last RCG study) and 1990. In 1990, over one-third of bachelor's degrees were awarded to those over 25 years of age.

Traditionally in the United States a baccalaureate degree has been viewed as a prerequisite for professional and management jobs, higher than average paying jobs, high career potential, and lower risk of unemployment in times of recession. The Recent College Graduate (RCG) series is designed to explore this perspective, and to provide information on the occupational and educational experiences of graduates approximately 1 year after graduation. Specifically, the following questions were addressed by the study:

- What was the employment status of recent graduates?
- What was the unemployment rate of college graduates 1 year after graduation?
- To what extent were graduates enrolled in further education and what were their educational aspirations?
- What were graduates' comparative average annual salaries?
- To what extent were graduates in jobs related to their major fields of study?
- What did graduates see as the career potential of their jobs?
- To what extent were graduates in jobs not requiring a college degree and to what extent were they underemployed?

Past Studies in Series. Previous RCG studies were conducted by the National Center for Education Statistics (NCES) in 1976, 1978, 1981, 1985, and 1987. Throughout this report, selected summary statistics are given for previous years. The reader is referred to previous reports (listed in the bibliography) for detailed information on these years. Data files for further analysis are available from the National Center for Education Statistics for RCG studies conducted in the years 1976, 1978, 1981, 1985, 1987, and 1991.[2]

Methodology. Results are based on a nationally representative sample of 16,172 bachelor's degree recipients receiving degrees between July 1989 and June 1990.[3] The weighted response rate for bachelor's recipients was 83.6 percent.[4] Data were collected over the phone by means of a Computer Assisted Telephone Interview (CATI) survey conducted between July and December 1991. Respondents answered employment-related questions for the week of April 22, 1991, approximately 1 year after their graduation. All differences cited among the 1991 RCG data are significant at the 95 percent level of significance with pair-wise t tests using a Bonferroni adjustment to the critical value for multiple comparisons (see Appendix B for a more detailed discussion of the survey methodology).[5]

Classifications Used in this Report. Data are reported and discussed by gender, race/ethnicity, type of major (professional, arts and sciences, and other), and major field of study. Data are reported by age in the detailed tables in Appendix A, but are not discussed in the text.

In previous RCG reports, major fields of study have been grouped for certain analyses into three broad categories: professional fields, arts and sciences fields, and other fields. In this classification, professional fields include the disciplines of business and management, education, engineering, health professions, and public affairs/social services. Arts and sciences include the major fields of biological sciences,

math, computer sciences and physical sciences, social sciences, history, humanities, and psychology. About 51 percent of graduates are in the professional fields, 36 percent in the arts and sciences, and 12 percent in other fields[6] (appendix table A-1). Throughout this report majors are discussed in terms of this grouping and as separate major fields. For descriptions of fields included under separate major field categories, see Appendix C.

This report is divided into two main sections. The first presents an overview of principal occupational and educational outcomes. The second section focuses on outcomes for specific major fields of study.

Principal Findings

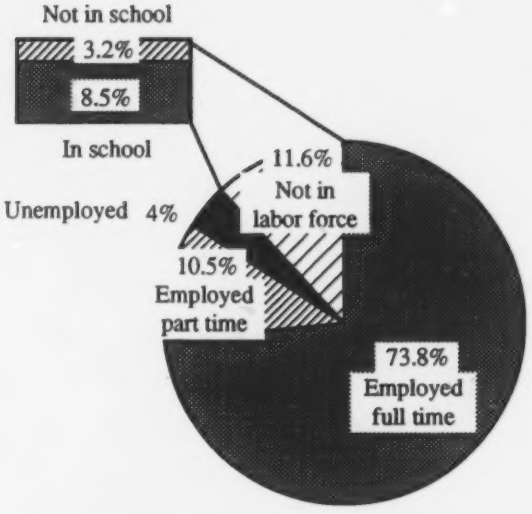
Overview of Labor Force and Enrollment Status

Figure 1a summarizes the labor force and enrollment status of 1990 graduates 1 year after graduation. Overall, 88 percent of graduates were in the labor force (defined as either employed or unemployed) and only 12 percent were not in the labor force. Most of those not in the labor force were in school. Only 3 percent of the total were both not in the labor force and not in school (appendix table A-2a).

Overall 35 percent of graduates had enrolled in additional education since receipt of the 1989-90 degree (figure 1b). Seventeen percent of graduates had enrolled full time and 18 percent part time. Of the total graduates 24 percent had enrolled in graduate degree programs beyond the bachelor's at some time since graduation (appendix table A-5).

The next sections present detailed discussion of the 1990 graduates' employment and enrollment status by graduate characteristics and major field of study.

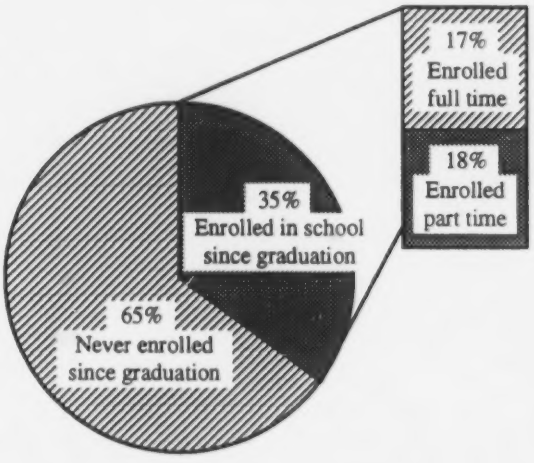
Figure 1a. Labor force status of bachelor's degree recipients 1 year after graduation: 1991



NOTE: Percentages may not add to 100 and details may not add to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Figure 1b. Percentage of 1989-90 bachelor's degree recipients enrolling in additional education at some time since receipt of degree: 1991



NOTE: Percentages may not add to 100 and details may not add to totals due to rounding.

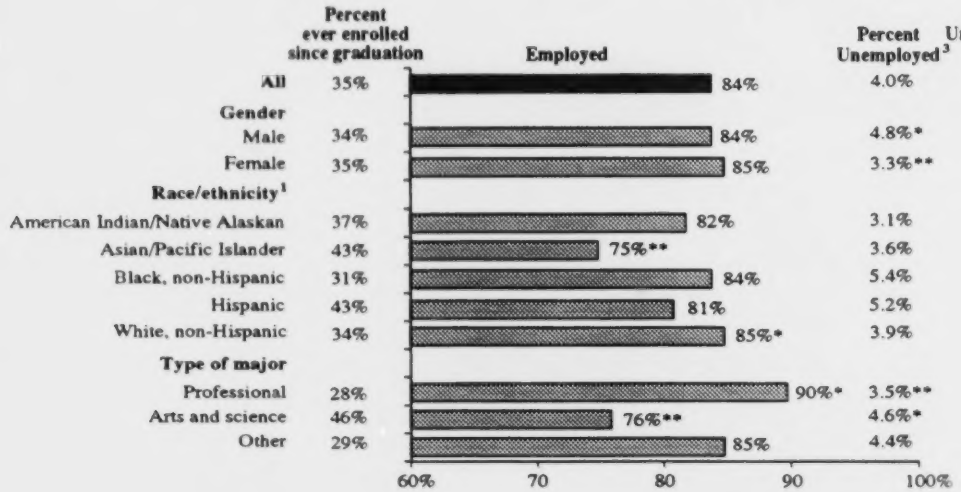
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Employment

One year after graduation (April 1991), 84 percent of 1989-90 college graduates were employed (74 percent full time and 11 percent part time; figure 2a and table 1). The definition of employment used in 1991 RCG excluded those whose only work was a graduate assistantship or work study. There were an additional 3 percent of total graduates who had assistantships or work study and no other work.[7] If these are considered employed, the percent employed would be 87 percent (appendix table A-14). Nationwide the employment rate for the civilian population was lower (74 percent for those aged 20 to 64, and 78 percent for those aged 25 to 29).[8]

Employment by Gender and Race/ethnicity. Among recent college graduates in 1991, little difference existed between the employment rates for men and women (84 percent for men and 85 percent for women; figure 2a). However, a larger percentage of women than men were employed part time (13 percent of women compared with 8 percent of men; table 2). Employment rates differ more by gender among the U.S. population as a whole than they do among recent college graduates. For the total U.S. civilian population aged 20 to 64, employment rates in April of 1991 were 74 percent for men and 66 percent for women, and for those aged 25 to 29, employment rates were 86 percent for men and 70 percent for women. Part-time employment rates for the total U.S. population aged 20 to 54 were 15 percent for women and 6 percent for men.[9]

Figure 2a. Employment and enrollment after graduation status of 1989-90 bachelor's degree recipients, by gender, race/ethnicity, and type of major: 1991


Percent ever enrolled since graduation
Employed
Percent Unemployed[3]
Unemployment Rate[4]
All 35% 84% 4.0% 4.5%
Gender
Male 34% 84% 4.8%* 5.4%*
Female 35% 85% 3.3%** 3.8%**
Race/ethnicity[1]
American Indian/Native Alaskan 37% 82% 3.1% 3.6%
Asian/Pacific Islander 43% 75%** 3.6% 4.5%
Black, non-Hispanic 31% 84% 5.4% 6.1%
Hispanic 43% 81% 5.2% 6.0%
White, non-Hispanic 34% 85%* 3.9% 4.4%
Type of major
Professional 28% 90%* 3.5%** 3.8%**
Arts and science 46% 76%** 4.6%* 5.7%*
Other 29% 85% 4.4% 4.9%
60% 70 80 90 100%

Results from past and current RCG

Year	Not working, looking[2]	Percent Unemployed[3]
1976	7%	5.1%
1978	6%	4.5%
1985	NA	3%
1987	5%	NA
1991	5%	4.0%

*Significantly higher than average for total graduates. See Appendix B for a discussion of tests of significance.
**Significantly lower than average for total graduates.
NA - not available.
[1]Nonresident aliens are included in appropriate race/ethnicity category.
[2]Includes those unemployed and those looking for work but not available for work in the reference week.
[3]Includes those both looking and available for work in the reference week as a percent of total graduates.
[4]Includes those both looking and available for work in reference week as a percent of the total graduates in the labor force.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*, and U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, May 1991, table A-3.

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Table 1.--Mean salaries, employment status, job characteristics, and enrollment after graduation status of 1989-90 bachelor's degree recipients 1 year after graduation, by major fields of study: 1991

Major fields of study[1]	Employed						Not employed				Ever enrolled in further education		
	Mean annual salary of full-time employed	Full time	Part time	Job related to field of study	Some career potential of job	Four-year degree not required for job	Total looking for work	Looking and available for work (Unemployed)[3]		Not looking for work	Total enrolled	Employed	Not employed
								Percent[4]	Rate[5]				
	(Dollars)	(Percent)											
All majors	$23,600	74%	11%	76%	79%	44%	5%	4.0%	4.5%	11%	35%	24%	11%
Professional fields	25,300	82	8	85	85	39	4	3.5	3.8	6	28	22	6
Business/management	24,700	83	6	81	83	47	6	4.9	5.2	5	21	16	5
Education	19,100	77	15	87	84	24	3	2.0	2.2	5	38	33	5
Engineering	30,900	85	3	89	90	19	4	3.1	3.4	8	32	23	9
Health professions	31,500	81	11	95	92	49	2	0.9	1.0	6	27	22	5
Public affairs/social services	20,800	77	11	71	71	52	5	4.3	4.6	7	35	28	7
Arts and sciences fields	21,700	62	14	61	71	50	6	4.6	5.7	17	46	28	18
Biological sciences	21,100	51	12	73	67	42	5	2.7	4.2	32	64	30	34
Math, computer sciences, physical sciences	27,200	71	8	86	85	33	5	4.2	5.1	15	40	24	16
Social sciences	22,200	68	12	53	72	52	6	4.2	4.9	13	42	28	14
Humanities	19,100	59	19	57	66	57	6	5.1	6.2	15	43	28	15
Psychology	19,200	60	14	65	69	53	8	5.3	6.7	18	50	31	20
History	21,300	58	15	30	60	63	9	6.5	8.2	18	50	30	21
Other[2]	20,800	74	11	74	78	51	5	4.4	4.9	10	29	21	9

[1]See Appendix C for description of majors included under each major field category.

[2]Includes agriculture and natural resources, architecture and environmental design, area studies and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

[3]This is a subset of the "total looking." Includes graduates not employed and both looking for work and available for work.

[4]Represents percent of total graduates who are unemployed.

[5]Represents percent of graduates in the labor force who are unemployed. The labor force is the sum of those employed and unemployed.

NOTE: Data may not add to totals reported in figures due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

With the exception of Asian employment rates, only small differences exist between employment rates of recent graduates by race/ethnicity. Employment rates for Asians were significantly lower than for all graduates (75 percent compared with 84 percent; figure 2a). However, as can be seen from figure 2a, Asians also have higher than the average enrollment after graduation rates (43 percent compared with 35 percent for the total).

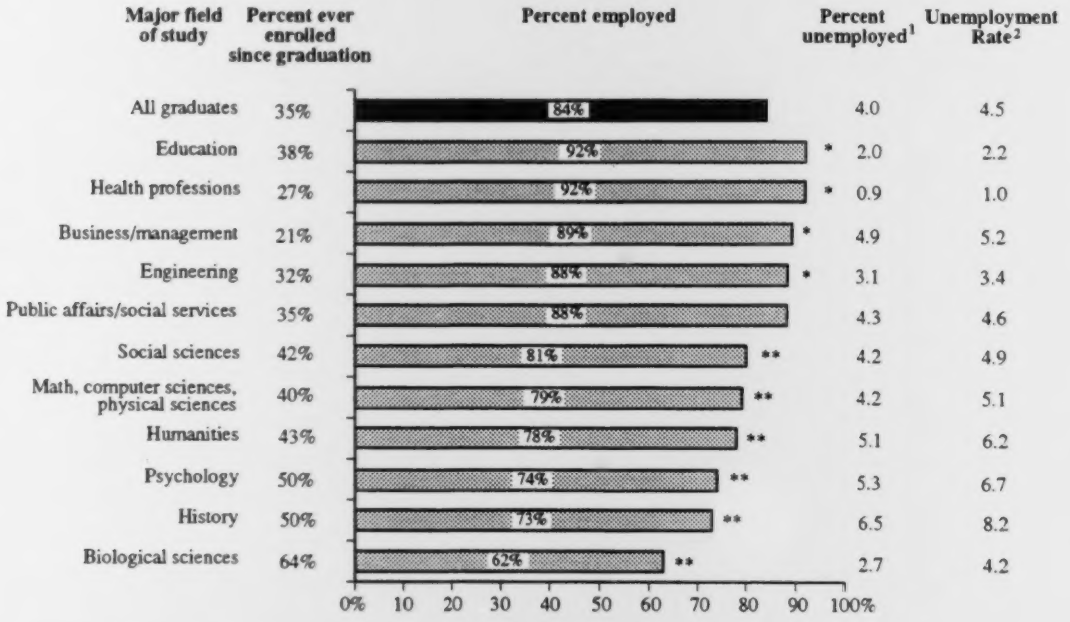
Employment and Major Field of Study. Employment rates are higher among those who majored in the professional fields than among those in the arts and sciences (90 percent compared with 76 percent). However, as will be discussed below, majors in the arts and sciences had higher rates of enrolling in further education since graduation (table 1 and figure 2b).

By specific major field of study, total employment rates ranged from 62 percent of the biological sciences majors, the field with the highest school enrollment after graduation, to 92 percent of education and health profession majors (figure 2b). Full-time employment ranged from 51 percent of biological sciences majors to 85 percent of engineering majors (table 1).

Unemployment

Unemployed as defined by the U.S. Department of Labor includes those persons who do not have jobs and are both looking and available for work in the reference weeks. This report uses the above definition for unemployed and gives two statistics with regard to unemployment: (1) the percent of the total graduates unemployed and (2) the percent of graduates in the labor force that are unemployed. (The labor force is the sum of those employed and unemployed.) This latter statistic is referred to as the unemployment rate and is

Figure 2b. Employment and enrollment status of recent college graduates 1 year after graduation, by major field of study: 1991


Major field of study
Percent ever enrolled since graduation
Percent employed
Percent unemployed[1]
Unemployment Rate[2]
All graduates 35% 84% 4.0 4.5
Education 38% 92% * 2.0 2.2
Health professions 27% 92% * 0.9 1.0
Business/management 21% 89% * 4.9 5.2
Engineering 32% 88% * 3.1 3.4
Public affairs/social services 35% 88% 4.3 4.6
Social sciences 42% 81% ** 4.2 4.9
Math, computer sciences, physical sciences 40% 79% ** 4.2 5.1
Humanities 43% 78% ** 5.1 6.2
Psychology 50% 74% ** 5.3 6.7
History 50% 73% ** 6.5 8.2
Biological sciences 64% 62% ** 2.7 4.2
0% 10 20 30 40 50 60 70 80 90 100%

*Significantly higher than average for total graduates. See Appendix B for discussion of tests of significance.
**Significantly lower than average for total graduates.
[1]Those not employed and looking and available for work as percent of total graduates.
[2]Those not employed and looking and available for work as percent of graduates in labor force.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

comparable with other government statistics reporting unemployment rates. Tables 1 and 2 and figures 2a and 2b give both the percent unemployed and the unemployment rate. The text discussion focuses on the unemployment rates rather than percent unemployed.

Rates of unemployment in the United States for the total population aged 16 and over and in the labor force have ranged from 3.4 to 6.5 percent in the 1960's; from 4.8 to 8.3 percent in the 1970's; and from 5.2 to 9.5 percent in the 1980's.

In 1990, the unemployment rate in the United States for those aged 16 and over was 5.4 percent, but by April of 1991 the rate had risen to 6.5 percent.[10] Among the recent college graduates in April of 1991, the rate of unemployment (defined as not working and both looking for work and available for work) was lower, 4.5 percent.[11]

Unemployment Rates by Gender and Race/ethnicity. Among recent graduates, rates of unemployment were higher for males than females (5.4 percent compared with 3.8 percent; table 2 and figure 2a). Among the total population in the labor force aged 16 and over in the same time period (April 1991), the unemployment rate for men was 7.0 percent and for women was 5.8 percent.[12]

Among recent graduates the unemployment rate for Asians was 4.5 percent, for blacks 6.1 percent, for Hispanics 6.0 percent, and for whites 4.4 percent (table 2 and figure 2a). (These differences were not significant.) Among the total population in the labor force aged 16 and older, the unemployment rate for blacks was 12.6 percent, for Hispanics 9.0 percent, and for white non-Hispanics 5.8 percent.[13]

Unemployment by Major Field of Study. By major, unemployment rates among graduates 1 year after graduation ranged from 1.0 percent for those graduating in the health professions to 8.2 percent for those graduating in history (table 1). The health professions and education had unemployment rates significantly below the average for all graduates.

Table 2.--Mean salaries, employment status, job characteristics, and enrollment after graduation status of 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991

Graduate characteristics	Employed						Not employed				Ever enrolled in further education	
	Mean annual salary of full-time employed	Full time	Part time	Job related to field of study	Some career potential of job	4-year degree not required for job	Total looking for work	Looking and available for work (unemployed)[1]		Not looking for work	Employed	Not employed
								Percent[2]	Rate[3]			
	(Dollars)	(Percent)										
All graduates	$23,600	74%	11%	76%	79%	44%	5%	4.0%	4.5%	11%	24%	11%
Gender												
Male	25,400	75	8	74	81	45	6	4.8	5.4	10	22	12
Female	22,000	72	13	77	78	43	4	3.3	3.8	11	25	10
Race/ethnicity												
American Indian/ Native Alaskan	21,200	72	10	84	74	55	3	3.1	3.6	15	27	10
Asian/Pacific Islander	25,900	67	8	80	81	31	5	3.6	4.5	20	23	20
Black, non-Hispanic	22,600	75	10	75	76	49	6	5.4	6.1	9	22	9
Hispanic	23,900	72	10	74	76	41	6	5.2	6.0	13	30	13
White, non-Hispanic	23,600	74	11	76	80	44	5	3.9	4.4	10	24	10

[1]This is a subset of "total looking to work." Includes graduates not employed and both looking for work and available for work.
[2]Represents percent of total graduates who are unemployed.
[3]Represents percent of graduates in the labor force who are unemployed. The labor force is the sum of those employed and unemployed.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

Enrollment in Additional Education

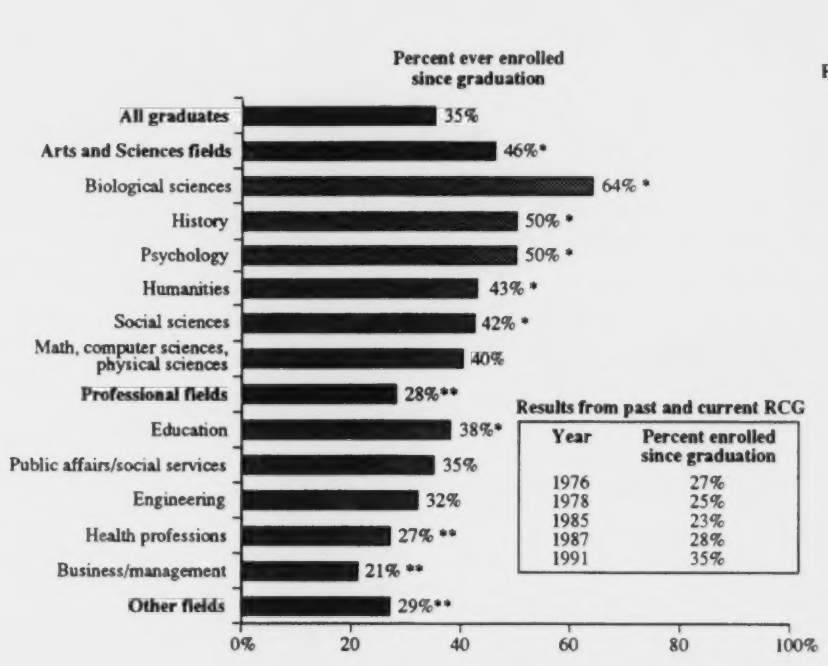
Over one-third (35 percent) of 1989-90 bachelor's graduates had enrolled in some type of additional education within 1 year of graduation (table 1 and figure 3). Most of those ever enrolled (24 percent of the total graduates) were enrolled and working. Eleven percent were enrolled and not working (table 1). In 1991, of the total graduates, 24 percent had enrolled in degree programs beyond the bachelor's (figure 3).

The percent enrolling in some type of additional education in previous RCG studies was considerably lower than the 35 percent enrolling in 1991, ranging from 23 percent in 1985 to 28 percent in 1987 (Figure 3). Some of this difference may be due to slight wording changes in the question and increased reporting of nondegree enrollment due to the CATI format of the question. The increase may also be due to difficulty in finding suitable employment. In 1991, an increase was also found in the percentage of graduates reporting that a 4-year college degree was not required for their job (see figure 10).

Enrollment by Type of Major. Majors in the arts and sciences had higher enrollment rates than those in the professional fields (46 percent for arts and sciences compared with 28 percent for professional fields; figure 3).

Enrollment by Specific Major. Enrollment rates ranged from 21 percent for business and management majors to 64 percent for those majoring in the biological sciences (figure 3). The health professions and business and management had enrollment rates below the average of all graduates (27 percent and 21

Figure 3. Enrollment status of 1989-90 bachelor's degree recipients 1 year after graduation: 1991



	Percent ever enrolled since graduation	
	Full time	In degree programs beyond the bachelor's
All graduates	17%	24%
Arts and Sciences fields	17%	34%
Biological sciences	17%	47%
History	17%	37%
Psychology	19%	40%
Humanities	17%	28%
Social sciences	16%	30%
Math, computer sciences, physical sciences	17%	30%
Professional fields	17%	18%
Education	27%	29%
Public affairs/social services	13%	22%
Engineering	18%	23%
Health professions	16%	20%
Business/management	13%	12%
Other fields	15%	18%

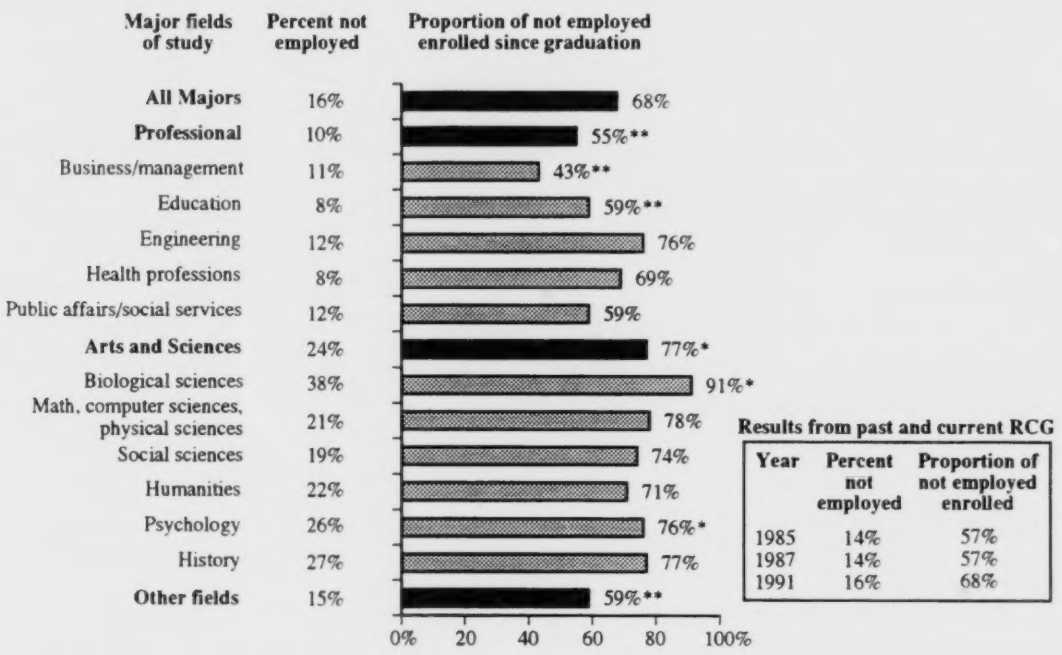
*Significantly higher than average for total graduates. See Appendix B for discussion of tests of significance.
**Significantly lower than average for total graduates.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

percent, respectively). The biological sciences, history, psychology, social sciences, and math, computer sciences, and physical sciences had enrollment rates above the average for the total graduates.

Full-time Enrollment. Seventeen percent of the graduates had ever enrolled in school full time since graduation (figure 3). Rates of full-time enrollment showed less and somewhat different variation by major than total enrollment, ranging from 13 percent for business and management, and for public affairs/social services, to 27 percent for education.

Not Employed Enrollment Rates. A question of interest concerns the extent to which those graduates who were not employed were enrolled in further education. Of the 16 percent of recent college graduates not working 1 year after graduation, over two-thirds, 68 percent, reported they had enrolled in further education since graduation (figure 4). The 1985 and 1987 RCG studies both found that 14 percent of graduates were not working and that 57 percent of those not working were enrolled. In 1991, among the 10 percent having majors in professional fields and not working, 55 percent had ever enrolled, and among the 24 percent not working in arts and sciences fields, 77 percent had ever enrolled (figure 4). By major, the proportion of graduates who were not working and had enrolled ranged from 43 percent for business and management to 91 percent for the biological sciences.

Figure 4. Percentage of 1989-90 bachelor's degree recipients not employed and proportion of not employed enrolled since graduation: 1991


Major fields of study
Percent not employed
Proportion of not employed enrolled since graduation
All Majors 16% 68%
Professional 10% 55%**
Business/management 11% 43%**
Education 8% 59%**
Engineering 12% 76%
Health professions 8% 69%
Public affairs/social services 12% 59%
Arts and Sciences 24% 77%*
Biological sciences 38% 91%*
Math, computer sciences, physical sciences 21% 78%
Social sciences 19% 74%
Humanities 22% 71%
Psychology 26% 76%*
History 27% 77%
Other fields 15% 59%**
0% 20 40 60 80 100%
Results from past and current RCG
Year | Percent not employed | Proportion of not employed enrolled
1985 | 14% | 57%
1987 | 14% | 57%
1991 | 16% | 68%

*Significantly higher than average for total graduates. The estimate for the proportion of not employed psychology majors that are enrolled (76 percent) is significantly higher than the average for the total graduates; while the same estimate (76 percent) for engineering majors is not significantly higher than the average due to differences in the standard errors of the two estimates. See Appendix B for discussion of tests of significance and table A-4 for relevant standard errors.

**Significantly lower than average for total graduates.

NOTE: Data in figure do not add to totals in table 1 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

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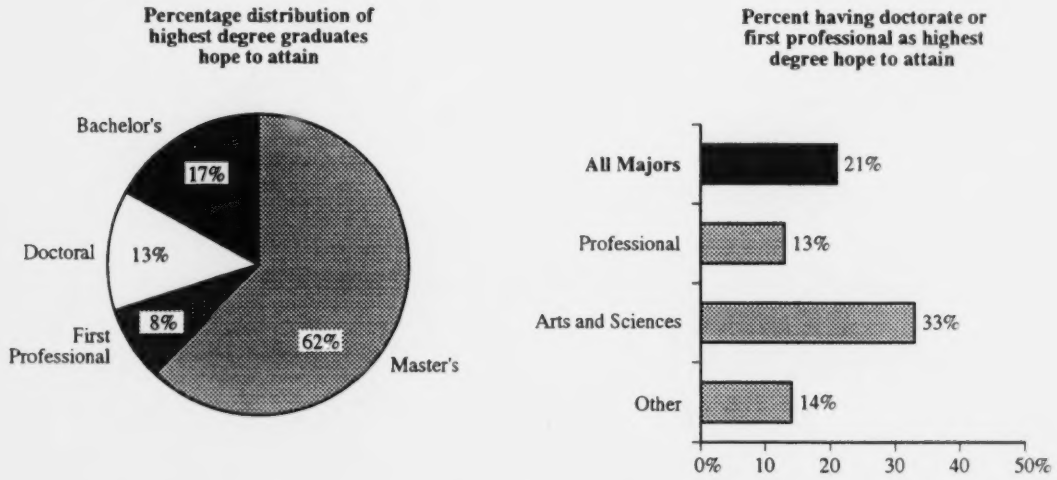
Educational Aspirations. While just over one-third (35 percent) of graduates had ever enrolled in further education within 1 year after graduation, most recent college graduates hoped to obtain a degree beyond the bachelor's (figure 5). Only about 17 percent of recent bachelor's degree recipients indicated that a bachelor's degree was the highest degree they hoped to obtain. Almost two-thirds (62 percent) indicated that they hoped to obtain a master's degree, 13 percent a doctorate, and 8 percent a first professional degree (figure 5).

Majors in the arts and sciences had higher educational aspirations than those in the professional fields. Thirty-three percent of those in the arts and sciences fields hoped to obtain a doctorate or first professional degree compared with 13 percent in professional fields (figure 5).

Figure 5. Educational aspirations of 1989-90 bachelor's degree recipients 1 year after graduation: 1991



SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

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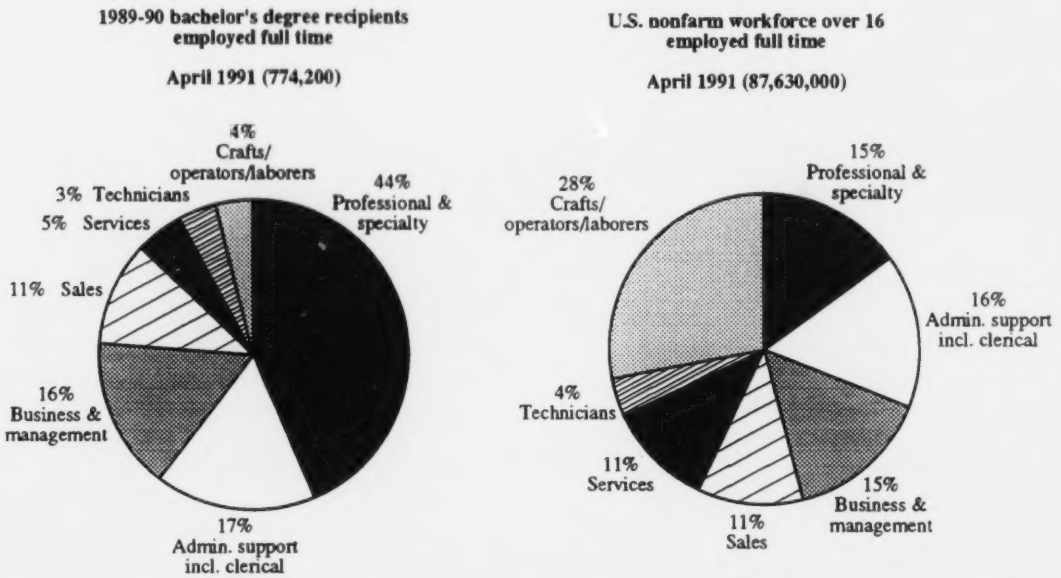
Types of Employment of Recent College Graduates Employed Full Time

In considering the occupational outcomes of a college degree, it is useful to compare the occupations of recent graduates to the U.S. work force as a whole, by broad categories. Among the U.S. population, an estimated 88 million people were employed full time in April of 1991 in non-farm occupations.[14] Of these, an estimated 774,200 were those who had graduated from college during 1989-90 with bachelor's degrees.

Among recent graduates employed full time, 44 percent were in professional and specialty occupations, 16 percent were in business/ management positions, 3 percent were technicians, 11 percent were in sales, 17 percent were in administrative support including clerical, 5 percent were in services, and 4 percent were in the categories of crafts, operators, and laborers (figure 6).[15]

Recent college graduates differed from the population as a whole in the larger percentage of professional and specialty workers, and in the smaller percentage of workers in the crafts, operators, and laborers category, and in the services category. Percentages similar to those of the total population were found in the categories of sales, technicians, and administrative support. Among the population as a whole 15 percent were in the professional and specialty occupations, 15 percent were in business and management, 4 percent were technicians, 11 percent were in sales, 16 percent were in administrative support including clerical, 11 percent were in services, and 28 percent were in the crafts, operators, and labor category.

Figure 6. Percentage distribution of broad occupational categories of 1989-90 bachelor's degree recipients employed full time and of U.S. workforce employed full time: 1991



SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*, and U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, May 1991, table A-31.

Average Salaries for Full-Time Employed Recent Graduates

The mean salary for 1989-90 bachelor's degree recipients who were full-time employed at the end of April of 1991, about 1 year after graduation, was $23,600 (table 3).[16] The median was $21,000. In 1991 the median salary for all U.S. workers over 16 who were employed full time was $22,300; the mean salary for this group was $26,600.[17]

Table 3 presents the mean annual income for the previous RCG studies in current and constant dollars. In constant dollars the data reflect a decline of about 2.6 percent in the annual income of full-time employed graduates since the 1987 study.

Recent analyses of Bureau of Labor Statistics Employment Cost Index and Current Population Survey data have concluded that for the total U.S. workforce the average hourly inflation-adjusted compensation fell 6 percent since 1987. Among all college educated workers, compensation fell about 3.1 percent.[18]

Table 3.--Mean annual salary of bachelor's degree recipients employed full time 1 year after graduation: RCG selected years 1976-91 (in current and constant dollars)

Year	Percent employed full time	Mean annual salary		Percent change
		(current dollars)	(constant 1990 dollars)	
1976	66%	$9,400	$21,600	-
1978	68	11,500	23,000	6.5%
1981	NA	15,200	21,900	-4.8
1985	74	18,300	22,100	.9
1987	75	20,300	23,300	4.1
1991	74	23,600	22,700	-2.6

NA - Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Recent College Graduate Surveys*, 1976, 1978, 1981, 1985, 1987, and 1991.

Salary by Major Field of Study. Average salaries were higher among graduates in the professional fields than in the arts and sciences ($25,300 compared with $21,700; table 1). The average salary for 1989-90 graduates in April of 1991, 1 year after graduation, ranged from just over $19,000 for humanities, education, and psychology graduates to about $30,900 for engineering and $31,500 for health professions graduates (figure 7). Salaries of graduates majoring in the health professions, engineering, math, computer sciences, and physical sciences, and business and management majors were above the average for the total graduates.

Majors in the health professions and engineering ranked first in terms of average annual salary. In both the 1985 and 1987 RCG studies health professions majors ranked second in salary rather than first. The results of the 1991 RCG study reflect the recent gains that have been made in the health occupations relative to other occupations. As noted by the Commission on Manpower in Science and Technology, "Salary increases among nurses exceed those in most fields, as requirements for health care grow faster than the supply of nurses."[19]

Figure 7. Mean annual salary of full-time employed and unemployment rate of 1989-90 bachelor's degree recipients 1 year after graduation, by major field of study: 1991

Major field of study
Unemployment rate[1]
Mean salary for full-time employed
Salary rank[2]
All Majors 4.5% $23,600
Health professions 1.0%** $31,500* (1)
Engineering 3.4% $30,900* (1)
Math, computer sciences, physical sciences 5.1% $27,200* (2)
Business/management 5.2% $24,700* (3)
Social sciences 4.9% $22,200** (4)
History 8.2% $21,300** (4)
Biological sciences 4.2% $21,100** (4)
Public affairs/social services 4.6% $20,800** (4)
Psychology 6.7% $19,200** (4)
Education 2.2%** $19,100** (4)
Humanities 6.2%* $19,100** (4)
$0 $5,000 $15,000 $25,000 $35,000

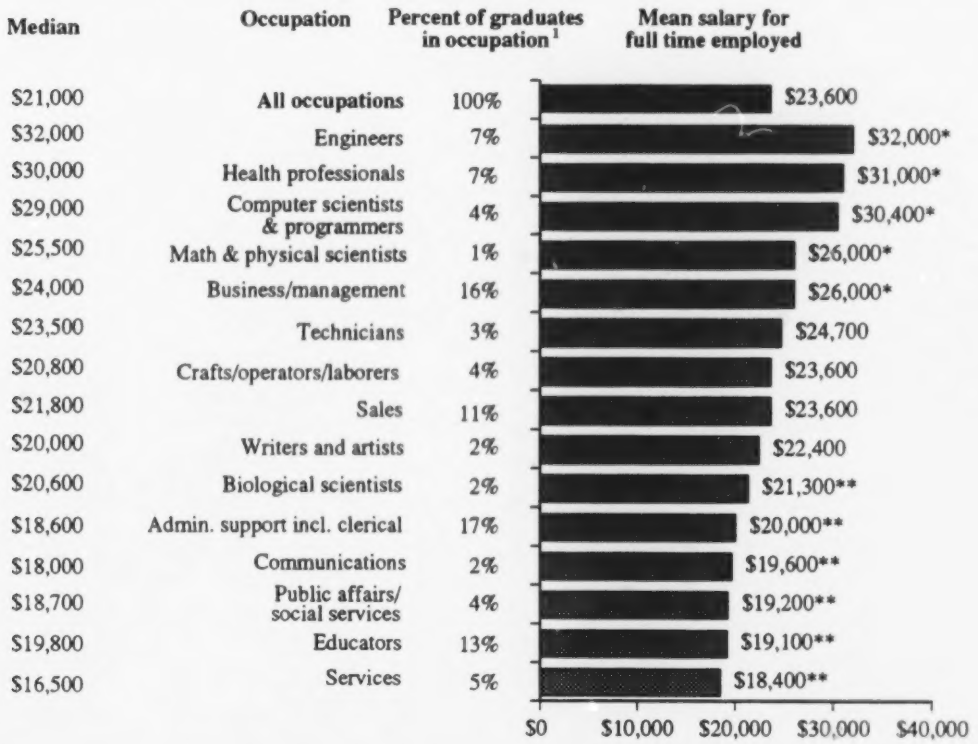
*Significantly higher than average for total graduates. See Appendix B for discussion of tests of significance.
**Significantly lower than average for total graduates.
[1]Unemployment rate is defined as not working and both looking and available for work in reference week as a percent of graduates in labor force.
[2]Equal ranks indicate no significant difference between major and the next higher major using tests at 95 percent significance level with Bonferroni adjustment for multiple comparisons.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Salaries by Occupation. Figure 8 gives the distribution of occupations, and mean and median salary by occupational category. Annual salaries of recent graduates employed full time ranged from $18,400 for those in service jobs and $19,100 for those in education, to $31,000 for health professionals and $32,000 for engineers (figure 8).

Occupation and Salaries by Gender

Table 4 gives the occupational distribution and the annual salary overall and by gender of recent graduates employed full time. The most frequent occupational categories for male graduates were business and management (17 percent), sales (13 percent) administrative support including clerical (13 percent), and engineering (12 percent). The most frequent categories for female graduates were administrative support including clerical (22 percent), education (18 percent, down from 31 percent in 1981 RCG), business and management (15 percent), and health professions (11 percent).

Figure 8. Mean and median salary for 1989-90 bachelor's degree recipients working full time 1 year after graduation, by occupation: 1991


Median
Occupation
Percent of graduates in occupation[1]
Mean salary for full time employed
$21,000 All occupations 100% $23,600
$32,000 Engineers 7% $32,000*
$30,000 Health professionals 7% $31,000*
$29,000 Computer scientists & programmers 4% $30,400*
$25,500 Math & physical scientists 1% $26,000*
$24,000 Business/management 16% $26,000*
$23,500 Technicians 3% $24,700
$20,800 Crafts/operators/laborers 4% $23,600
$21,800 Sales 11% $23,600
$20,000 Writers and artists 2% $22,400
$20,600 Biological scientists 2% $21,300**
$18,600 Admin. support incl. clerical 17% $20,000**
$18,000 Communications 2% $19,600**
$18,700 Public affairs/ social services 4% $19,200**
$19,800 Educators 13% $19,100**
$16,500 Services 5% $18,400**
$0
$10,000
$20,000
$30,000
$40,000

*Significantly higher than average for total graduates. See Appendix B for discussion of tests of significance.
**Significantly lower than average for total graduates.
[1]In addition to categories listed, 2 percent were employed in "other" occupations.
NOTE: Salaries have been rounded to nearest 100. Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Salary by Gender. The overall mean salary for male recent graduates employed full time was significantly higher than for female graduates ($25,400 for men compared with $22,000 for women; table 4). For the 1991 RCG, women's full-time salaries were 87 percent of men's full-time salaries (table 4). Ten years earlier, in the 1981 RCG survey, women's salaries were 79 percent of those of men (table 4).

Overall in the U.S. among all full-time employed workers, women's mean weekly salaries were 74 percent of men's salaries in 1991 (table 4). Among those employed full time with 4 years of college, women's mean, weekly salaries were 81 percent of those of men.[20]

Salary by Occupation and Gender. Males had significantly higher salaries than females for the occupations of business and managers, educators, technicians, administrative support including clerical, crafts/operators/laborers, sales, and services (table 4).

Table 4.--Percentage distribution and mean annual salary of 1989-90 bachelor's degree recipients employed full time, by occupation and by gender: 1991

Occupation	Full-time employees						
	Total		Male		Female		Female as percent of male
	Percent	Mean annual salary	Percent	Mean annual salary	Percent	Mean annual salary	
All occupations*	100	$23,600	100	$25,400	100	$22,000	87
Business/managers*	16	26,000	17	26,900	15	25,000	93
Educators*	13	19,100	7	20,300	18	18,700	92
Engineers	7	32,000	12	32,200	1	30,300	94
Health professionals	7	31,000	3	32,300	11	30,700	95
Public affairs/social services	4	19,200	2	19,300	5	19,200	99
Biological scientists	2	21,300	3	20,600	2	22,300	108
Math and physical scientists	1	26,000	2	26,400	1	25,500	97
Computer scientists and programmers	4	30,400	7	31,000	2	28,800	93
Communications	2	19,600	2	19,900	3	19,400	97
Writers, artists	2	22,400	2	22,300	2	22,400	100
Technicians*	3	24,700	4	25,800	3	23,200	90
Administrative support/ clerical*	17	19,900	13	21,200	22	19,300	91
Crafts, operators, laborers*	4	23,600	7	24,300	1	18,500	76
Sales personnel*	11	23,600	13	25,600	9	20,900	82
Service personnel*	5	18,400	5	20,200	4	16,300	81
Other	2	24,100	2	24,500	1	23,000	94

Females' salaries as a percent of males' salaries	
RCG 1981	79%
RCG 1991	87%
Total US 1991 (mean weekly, full time)	74%
Total 4 years of college 1991(mean weekly, full time)	81%

*Differences in male and female salaries are statistically significant at the 95 percent significance level with Bonferroni adjustment for multiple comparisons.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduate Survey*, and U.S. Department of Labor, Bureau of Labor Statistics, unpublished tabulations from the Current Population Survey: 1991 Annual Averages, table 17.

Salary by Major Field of Study and Gender. Differences in male and female salaries persist among men and women having the same majors. By major field of study, men's full-time salaries were significantly higher than women's full-time salaries for the fields of business and management, education, math, computer sciences and physical sciences, social sciences, humanities, and the category "other fields."

Table 5.--Average annual salary of 1989-90 bachelor's degree recipients employed full time, by major fields by gender: 1991

Major field	Mean annual salary			Female salary as percent of male
	Total	Male	Female	
All majors*	$23,600	$25,400	$22,000	87
Professional fields*	25,300	27,100	23,600	87
Business/management*	24,700	26,000	23,300	90
Education*	19,100	21,000	18,600	89
Engineering	30,900	31,000	30,200	97
Health professions	31,500	33,900	30,900	91
Public affairs/social services	20,800	21,600	20,200	94
Arts and sciences fields*	21,700	23,500	20,000	85
Biological sciences	21,100	21,800	20,400	93
Math, computer sciences, physical sciences*	27,200	28,000	25,500	91
Social sciences*	22,200	24,200	20,000	83
History	21,300	21,000	22,100	105
Humanities*	19,100	20,300	18,300	90
Psychology	19,200	19,700	18,900	96
Other fields*	20,800	22,100	19,700	89

*Male and female mean salaries differ significantly from each other at the 95 percent level of significance with Bonferroni adjustment for multiple comparisons.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Relationship of Job to Major Field of Study

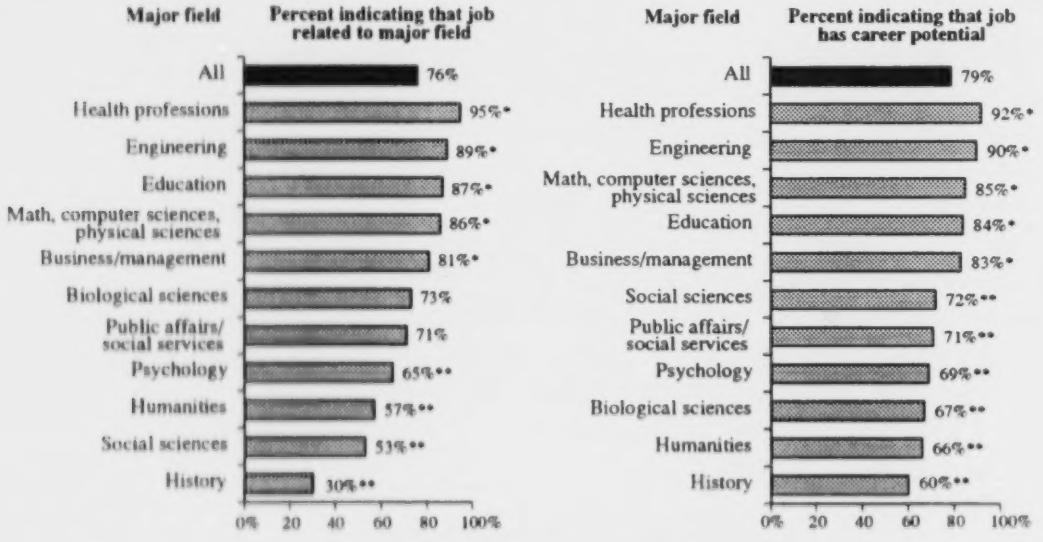
Over three-fourths (76 percent) of the total employed 1989-90 graduates (employed full and part time) indicated that they had jobs that were related to their major field of study (table 1 and figure 9). This figure is very similar to the percent in previous RCG studies (78 percent in 1985 and 1987; figure 9).

Obtaining a job related to major field of study was more frequent among graduates having majors in professional fields than among those in the arts and sciences or the other fields. Eighty-five percent of those having majors in professional fields obtained jobs that they reported were related to their field, compared with 61 percent in the arts and sciences, and 74 percent in the category of other fields (table 1). Among the specific majors, the percent of graduates obtaining jobs that they reported were in their field ranged from only 30 percent for history majors to 95 percent for majors in the health professions.

Career Potential of Job

Overall, 79 percent of all employed recent college graduates indicated that their job had some career potential. There was somewhat less difference by major field in perception of career potential than of the relationship of job to major field. By specific major, the percentage indicating that their job had career potential ranged from 60 percent for history majors to 92 percent for health profession majors (table 1 and figure 9). Eighty-five percent of graduates in the professional fields and 71 percent of majors in the arts and sciences reported their job had career potential (table 1).

Figure 9. Graduates' evaluation of relationship of job to major field and career potential of job, by major field: 1991



Results from past and current RCG

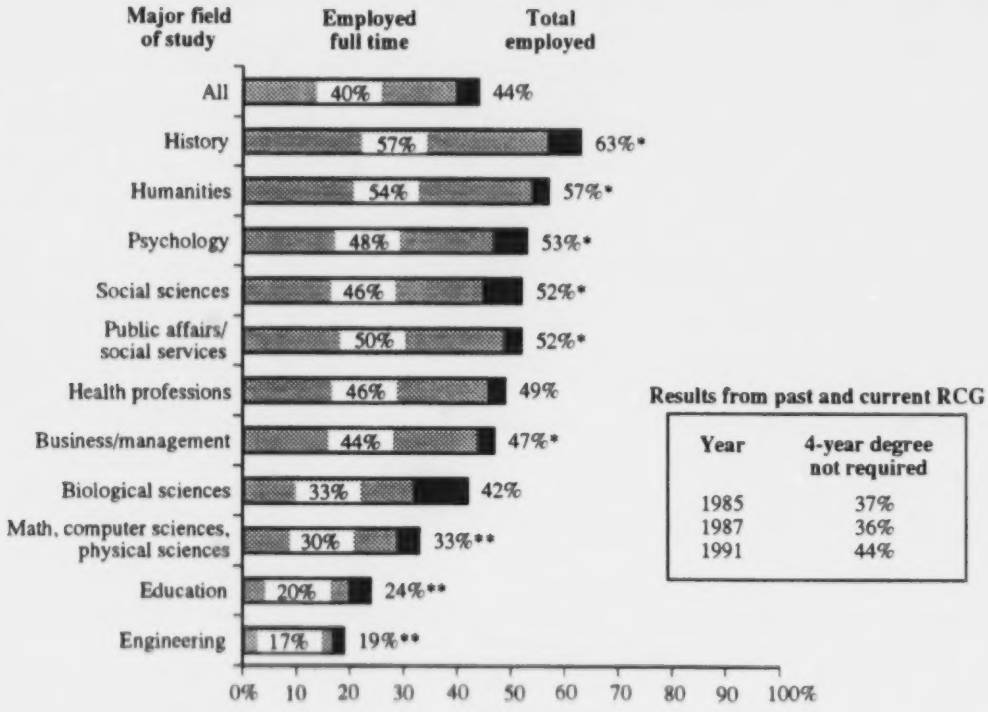
Year	Job related to major field	Some career potential
1985	78	57
1987	78	78
1991	76	79

*Significantly higher than average for total graduates. See Appendix B for discussion of tests of significance.
**Significantly lower than average for total graduates.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

College Degree Required

The occupational distribution of recent graduates indicates that a substantial proportion of graduates employed full time were in jobs not traditionally considered to require a 4-year college degree (figure 6 and figure 8).[21] When employed graduates in the 1991 RCG survey were specifically asked whether a 4-year college degree was required for their job, 44 percent indicated that a degree was not required (table 1 and figure 10).[22] Among those employed full time, 40 percent indicated that a 4-year degree was not required. Among the specific majors the percentage indicating that a degree was not required ranged from 19 percent among engineering graduates to 63 percent among history graduates. Among those employed full time the percentage ranged from 17 percent for engineering majors to 57 percent for history majors (figure 10).

Figure 10. Percentage of 1989-90 bachelor's degree recipients indicating that a 4-year college degree was not required for their job: 1991

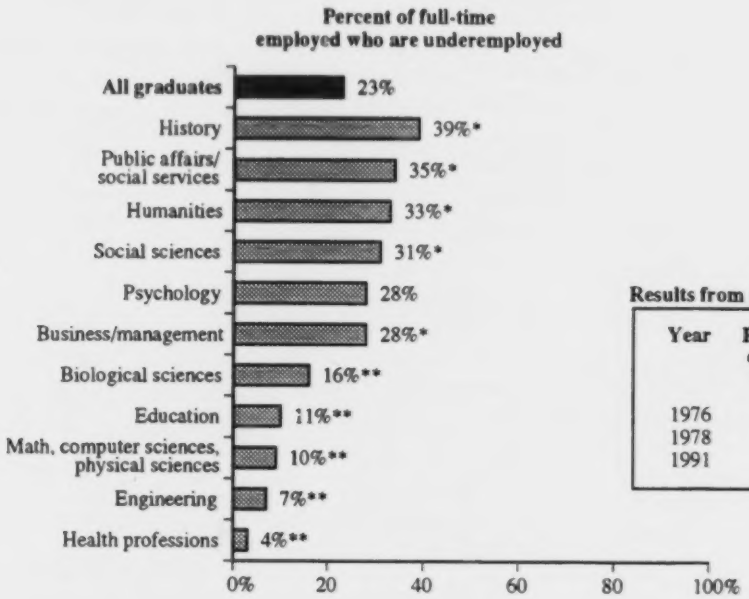


*Significantly higher than average for total graduates. See Appendix B for discussion of tests of significance.
**Significantly lower than average for total graduates.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Underemployment

In RCG, underemployment has been defined as being employed in the jobs of sales, service, administrative support, crafts, laborers, and operators, and also reporting on the survey that a college degree was not required for the job held during the reference week. About one-quarter (23 percent) of the full-time employed graduates in the 1991 RCG study were found to be underemployed (figure 11). This figure is similar to the 24 percent found to be underemployed in 1976 RCG and the 23 percent underemployed in 1978 RCG. By major field of study, underemployment ranged from 4 percent for graduates in the health professions to 39 percent for graduates of history (figure 11).

Figure 11. Percentage of 1989-90 bachelor's degree recipients employed full time who are underemployed: 1991



Results from past and current RCG

Year	Percent of full-time employed who are underemployed
1976	24%
1978	23%
1991	23%

*Significantly higher than average for total graduates. See Appendix B for discussion of tests of significance.
**Significantly lower than average for total graduates.
NOTE: Underemployed are those graduates who are employed full time in the jobs of sales, service, administrative support, crafts, operators, and laborers, and who indicated a college degree was not required for job.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Profile of Major Fields of Study

This section provides individual profiles of each of the majors separately categorized under the professional fields and arts and sciences fields.

Professional Fields

Business and Management. Almost 90 percent of business and management majors were employed (83 percent full time and 6 percent part time; figure 12). Over 80 percent indicated that their job was related to their major field and that their job had career potential. However, almost half (47 percent) indicated that a 4-year college degree was not required for their job. About one-third had jobs as business/managers; 29 percent had jobs in administrative support occupations; and 18 percent had jobs in sales. The percent of business and management majors who are women has risen over the last 10 years. In the 1981 RCG, 34 percent of the business and management majors employed full-time were women, and the corresponding figure for the 1991 RCG is 46 percent (data not shown). In salary, business and management majors working full time ranked third with an average salary of $24,700 (figure 7). The unemployment rate was 5.2 percent. School enrollment since graduation was the lowest among the majors, at 21 percent.

Figure 12. Status of 1989-90 bachelor's degree recipients majoring in BUSINESS AND MANAGEMENT: 1991

Employment status	
Employed	89%
Employed full time	83%
Employed part time	6%
Not working	11%
Looking for work	6%
Not looking for work	5%
Unemployment rate	5.2%
Percent unemployed	4.9%
Enrollment status	
Total enrolled	21%
Enrolled working	16%
Enrolled not working	5%

Occupations of employed (full and part time) [1]	Percent of employed reporting: Job related to major field	Job has career potential	4-yr degree not req'd	Mean annual salary: All employed [2]	Employed full time
Business/managers	92%	91%	31%	$26,500	$26,700
Admin. support incl. clerical	78%	77%	58%	$20,000	$21,200
Sales personnel	86%	84%	46%	$23,900	$24,700
Comp. scientists/prog.	86%	94%	35%	$29,700	$30,100
Crafts/operators/laborers	48%	68%	78%	$24,000	$26,500
Service personnel	44%	54%	86%	$17,900	$21,300
All business and management majors	**81%**	**83%**	**47%**	**$23,800**	**$24,700**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Education. Graduates in education had an employment rate above the average for the total graduates (92 percent, with 77 percent employed full time and 15 percent part time; figure 13). However, about 15 percent of those employed as teachers were employed in substitute teaching jobs (data not shown).

Almost 90 percent of education majors (87 percent) indicated they had jobs related to their major field of study, and 84 percent indicated that their job had career potential. Over three-fourths (77 percent) had obtained jobs as educators. The next largest category of occupations for education majors was administrative support, in which 7 percent of education majors were employed. About one-fourth (24 percent) indicated that a college degree was not required for their job. Unemployment among education majors (2.2 percent) was below the average for total majors. While near the average for the total graduates in percent enrolling in further education after graduation (38 percent; table 1), education majors had the highest percentage of ever enrolling in school *full time* since graduation (27 percent). The average salary for education majors employed full time was $19,100.

Figure 13. Status of 1989-90 bachelor's degree recipients majoring in EDUCATION: 1991

Employment status	
Employed	92%
Employed full time	77%
Employed part time	15%
Not working	8%
Looking for work	3%
Not looking for work	5%
Unemployment rate	2.2%
Percent unemployed	2.0%
Enrollment status	
Total enrolled	38%
Enrolled working	33%
Enrolled not working	5%

Occupations of employed (full and part time)[1]	Percent of employed reporting			Mean annual salary	
	Job related to major field	Job has career potential	4-yr degree not req'd	All employed[2]	Employed full time
Educators	99%	90%	10%	$17,600	$19,100
Admin. support incl.cler.	42%	67%	80%	$16,200	$18,200
Service personnel	50%	28%	83%	$12,000	$14,300
Sales personnel	28%	56%	81%	$19,300	$18,900
All education majors	**87%**	**84%**	**24%**	**$17,500**	**$19,100**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Engineering. Engineering majors employed full time had among the highest salaries of all majors, $30,900. Eighty-eight percent of engineering graduates were employed (85 percent full time and 3 percent part time; figure 14). Of the 12 percent not working, over three-fourths (76 percent) had enrolled in school (figure 4). Overall, about one-third of engineering graduates had ever enrolled since graduation (figure 14). Almost 60 percent (58 percent) of those employed were employed as engineers. About 7 percent of engineering graduates were employed as business/managers, 7 percent in the crafts/operators/laborers category, 7 percent in the technician category, and 6 percent as computer scientists/programmers. About 90 percent of engineering graduates indicated they had jobs related to their major field and that their job had career potential. Only 19 percent indicated that a college degree was not required. The unemployment rate for engineers was 3.4 percent.

Figure 14. Status of 1989-90 bachelor's degree recipients majoring in ENGINEERING: 1991

Employment status	
Employed	88%
Employed full time	85%
Employed part time	3%
Not working	12%
Looking for work	4%
Not looking for work	8%
Unemployment rate	3.4%
Percent unemployed	3.1%
Enrollment status	
Total enrolled	32%
Enrolled working	23%
Enrolled not working	9%

Occupations of employed (full and part time)[1]	Percent of employed reporting: Job related to major field	Job has career potential	4-yr degree not req'd	Mean annual salary: All employed[2]	Employed full time
Engineers	98%	96%	7%	$32,200	$32,300
Business/managers	84%	91%	30%	$28,900	$29,300
Crafts/operators/laborers	71%	60%	67%	$25,200	$26,100
Technicians	86%	93%	24%	$31,400	$32,300
Comp. scientists/progr.	91%	89%	19%	$30,600	$31,700
Adm. support incl. cler.	62%	72%	51%	$25,900	$31,200
Sales personnel	76%	91%	19%	$30,000	$30,000
All engineering majors	**89%**	**90%**	**19%**	**$30,300**	**$30,900**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Health Professions. Graduates in the health professions had the lowest unemployment rate (1.0 percent; figure 15) and ranked first in salary (along with engineering). The average full-time salary was $31,500. Over 90 percent (92 percent) of health professions graduates were employed (81 percent full time and 11 percent part time). Eighty percent of the employed were employed as health professionals, 5 percent in administrative support, 4 percent as business/managers, and 3 percent in the biological sciences. Ninety-five percent reported that their job was related to their major field and 92 percent that the job had career potential. About half (49 percent) reported that a 4-year degree was not required. Just over one-fourth had ever enrolled since graduation.

Figure 15. Status of 1989-90 bachelor's degree recipients majoring in the HEALTH PROFESSIONS: 1991

Employment status	
Employed	92%
Employed full time	81%
Employed part time	11%
Not working	8%
Looking for work	2%
Not looking for work	6%
Unemployment rate	1.0%
Percent unemployed	0.9%
Enrollment status	
Total enrolled	27%
Enrolled working	22%
Enrolled not working	5%

Occupations of employed (full and part time)[1]	Percent of employed reporting			Mean annual salary	
	Job related to major field	Job has career potential	4-yr degree not req'd	All employed[2]	Employed full time
Health professionals	99%	95%	48%	$31,500	$32,700
Adm. support incl. cler.	44%	49%	77%	$16,900	$22,800
Business/managers	89%	100%	62%	$29,700	$32,700
Biological scientists	93%	93%	30%	$24,600	$26,800
All health profession majors	**95%**	**92%**	**49%**	**$29,600**	**$31,500**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Public Affairs. Eighty-eight percent of public affairs/social services majors were employed (77 percent full time and 11 percent part time; figure 16). About one-third (31 percent) obtained jobs in public affairs/social services, about one-fourth (26 percent) obtained jobs as service personnel, and 12 percent were employed in administrative support including clerical. About 71 percent indicated that their job was related to their major field, and 71 percent that the job had career potential. Just over half (52 percent) indicated that a 4-year college degree was not required. About one-third (35 percent) had ever enrolled since graduation. The average full-time salary was $20,800. The unemployment rate was 4.6 percent.

Figure 16. Status of 1989-90 bachelor's degree recipients majoring in PUBLIC AFFAIRS: 1991

Employment status	
Employed	88%
Employed full time	77%
Employed part time	11%
Not working	12%
Looking for work	5%
Not looking for work	7%
Unemployment rate	4.6%
Percent unemployed	4.3%
Enrollment status	
Total enrolled	35%
Enrolled working	28%
Enrolled not working	7%

Occupations of employed (full and part time)[1]	Percent of employed reporting: Job related to major field	Job has career potential	4-yr degree not req'd	Mean annual salary: All employed[2]	Employed full time
Public affairs	98%	82%	15%	$18,200	$19,300
Service personnel	78%	74%	76%	$19,200	$21,600
Admin. support incl. cler.	58%	72%	73%	$16,900	$17,400
Business/managers	53%	67%	69%	$23,600	$26,900
Crafts/operators/laborers	14%	58%	86%	$21,600	$22,200
Educators	67%	48%	36%	$12,900	$16,600
Sales personnel	15%	60%	54%	$21,600	$21,600
All public affairs majors	**71%**	**71%**	**52%**	**$19,200**	**$20,800**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Arts and Sciences Fields

Biological Sciences. The biological sciences have the highest percentage of graduates ever enrolled since graduation (64 percent), and just over one-third (34 percent) of biological science majors were enrolled and not working (figure 17). About 62 percent of biological science majors were working (51 percent full time and 12 percent part time). Among those employed, 27 percent had jobs as biological scientists. Other employed graduates were widely dispersed in related and unrelated occupations. Among those employed in occupations related to the biological sciences, 10 percent were employed as technicians, 9 percent as educators, 7 percent in the health professions, and 4 percent as physical scientists. About three-fourths (73 percent) reported having jobs related to their major field of study, and two-thirds indicated that their job had career potential. About 42 percent were in jobs not requiring a 4-year degree, and the mean salary for full-time employed was $21,100. Unemployment among biological science majors was 4.2 percent.

Figure 17. Status of 1989-90 bachelor's degree recipients majoring in the BIOLOGICAL SCIENCES: 1991

Employment status	
Employed	62%
Employed full time	51%
Employed part time	12%
Not working	38%
Looking for work	5%
Not looking for work	32%
Unemployment rate	4.2%
Percent unemployed	2.7%
Enrollment status	
Total enrolled	64%
Enrolled working	30%
Enrolled not working	34%

Occupations of employed (full and part time)[1]	Percent of employed reporting			Mean annual salary	
	Job related to major field	Job has career potential	4-yr degree not req'd	All employed[2]	Employed full time
27% Biological scientists	95%	75%	21%	$19,900	$21,100
12% Admin. support incl. cler.	42%	39%	78%	$13,800	$17,600
10% Technicians	92%	71%	28%	$18,400	$20,000
9% Educators	96%	72%	26%	$15,800	$18,500
9% Sales	37%	64%	55%	$18,000	$20,800
8% Business/managers	75%	76%	39%	$24,200	$24,600
7% Health professionals	79%	66%	67%	$17,600	$21,100
6% Service personnel	60%	74%	64%	$13,600	$19,600
4% Math/physical scientists	91%	82%	9%	$22,100	$22,100
4% Crafts/operators/laborers	45%	37%	75%	$18,900	$23,700
All biological science majors	**73%**	**67%**	**42%**	**$18,400**	**$21,100**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
NOTE: Details may not add to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

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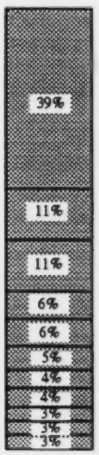
Math, Computer Sciences, and Physical Sciences. About 80 percent of math, computer science, and physical sciences majors were employed (71 percent full time and 8 percent part time; figure 18). Almost 40 percent were employed as computer scientists/programmers and 6 percent were employed in math/physical sciences. Others graduating in these fields were widely dispersed among the occupational categories. Eleven percent were educators and the same percentage were in administrative support occupations. Five percent were employed as engineers, 4 percent as technicians, and 3 percent in the biological sciences. Eighty-six percent indicated that their job was related to their major field, and 85 percent that it had career potential. One-third indicated that a 4-year degree was not required for the job. About 40 percent had ever enrolled since graduation, and 16 percent were enrolled and not working. The mean salary for full-time employed was $27,200, and the unemployment rate was 5.1 percent.

Figure 18. Status of 1989-90 bachelor's degree recipients majoring in MATH, COMPUTER SCIENCES, and PHYSICAL SCIENCES: 1991

Employment status	
Employed	79%
Employed full time	71%
Employed part time	8%
Not working	21%
Looking for work	5%
Not looking for work	15%
Unemployment rate	5.1%
Percent unemployed	4.2%
Enrollment status	
Total enrolled	40%
Enrolled working	24%
Enrolled not working	16%



Occupations of employed (full and part time)[1]	Percent of employed reporting: Job related to major field	Job has career potential	4-yr degree not req'd	Mean annual salary: All employed[2]	Employed full time
Computer scientists/ programmers	98%	97%	24%	$30,300	$30,500
Educators	88%	77%	19%	$17,500	$20,200
Admin. support incl. cler.	71%	60%	50%	$19,400	$21,800
Math/physical scientists	97%	95%	10%	$26,700	$27,300
Business/managers	82%	93%	47%	$25,800	$26,900
Engineers	90%	100%	20%	$32,600	$33,000
Technicians	95%	83%	35%	$20,800	$23,600
Sales personnel	46%	59%	73%	$21,200	$25,500
Service personnel	19%	33%	85%	$15,300	$19,000
Crafts/operators/laborers	47%	65%	63%	$26,500	$30,800
Biological scientists	90%	87%	21%	$25,000	$26,100
All math, computer sciences, and physical sciences majors	**86%**	**85%**	**33%**	**$25,400**	**$27,200**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
NOTE: Details may not add to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Social Sciences. About 81 percent of graduates in the social sciences were employed (68 percent full time and 12 percent part time; figure 19). Over 40 percent had ever enrolled in school since graduation, and 14 percent were enrolled and not working. Occupations were widely distributed with the largest category being administrative support, in which 25 percent were employed. The next largest categories were business/managers with 18 percent, and sales with 13 percent. Unemployment was 4.9 percent. Only about half of the graduates (53 percent) indicated that their job was related to their major field, but almost three-fourths (72 percent) indicated that their job had some career potential. About half (52 percent) indicated that a 4-year degree was not required for their job, and the average salary for full-time employed was $22,200.

Figure 19. Status of 1989-90 bachelor's degree recipients majoring in the SOCIAL SCIENCES: 1991

Employment status	
Employed	81%
Employed full time	68%
Employed part time	12%
Not working	19%
Looking for work	6%
Not looking for work	13%
Unemployment rate	4.9%
Percent unemployed	4.2%
Enrollment status	
Total enrolled	42%
Enrolled working	28%
Enrolled not working	14%

Occupations of employed (full and part time) [1]	Percent of employed reporting			Mean annual salary	
	Job related to major field	Job has career potential	4-yr degree not req'd	All employed [2]	Employed full time
25% Admin. support incl. cler.	49%	68%	68%	$17,400	$19,200
18% Business/managers	64%	89%	31%	$25,000	$25,800
13% Sales personnel	48%	77%	50%	$21,600	$23,800
10% Service personnel	32%	44%	89%	$16,800	$20,400
8% Public affairs/social serv.	89%	77%	22%	$19,100	$19,500
6% Educators	67%	68%	31%	$15,600	$18,400
4% Technicians	52%	67%	36%	$21,400	$24,500
4% Crafts/operators/laborers	18%	61%	83%	$19,700	$22,600
All social science majors	**53%**	**72%**	**52%**	**$20,300**	**$22,200**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
NOTE: Details may not add to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

History. About 73 percent of history majors were employed (58 percent full time and 15 percent part time; figure 20). Fifty percent had ever enrolled since graduation, and 21 percent were enrolled and not working. History majors had an unemployment rate of 8.2 percent.

The occupations of employed history majors were widely dispersed. About one-quarter (26 percent) had administrative support occupations.

The next largest occupational categories were educators, in which 17 percent of history majors were employed, and sales personnel in which 13 percent were employed. Only about one-third (30 percent) of history majors reported that their job was related to their major field, and 60 percent indicated that the job had career potential. About two-thirds (63 percent) indicated that a 4-year degree was not required, and the average salary was $21,300.

Figure 20. Status of 1989-90 bachelor's degree recipients majoring in HISTORY: 1991

Employment status	
Employed	73%
Employed full time	58%
Employed part time	15%
Not working	27%
Looking for work	9%
Not looking for work	18%
Unemployment rate	8.2%
Percent unemployed	6.5%
Enrollment status	
Total enrolled	50%
Enrolled working	30%
Enrolled not working	21%

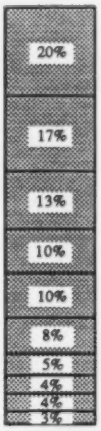
Occupations of employed (full and part time)[1]	Percent of employed reporting			Mean annual salary	
	Job related to major field	Job has career potential	4-yr degree not req'd	All employed[2]	Employed full time
26% Admin. support incl. cler.	22%	43%	86%	$15,500	$18,200
17% Educators	71%	63%	13%	$16,200	$18,600
13% Sales personnel	24%	73%	67%	$25,500	$26,700
9% Service personnel	6%	26%	100%	$9,000	$13,800
8% Business/managers	15%	92%	42%	$28,400	$28,400
4% Public affairs/soc. serv.	64%	78%	60%	$18,100	$20,900
4% Biological scientists	--	67%	100%	$14,100	$18,700
4% Communications	40%	60%	40%	$11,700	$14,600
4% Technicians	50%	51%	44%	$20,100	$20,100
4% Crafts/operators/laborers	--	51%	100%	$18,200	$18,200
All history majors	**30%**	**60%**	**63%**	**$18,400**	**$21,300**

--Less than .05 percent.
[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
NOTE: Details may not add to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey.*

Humanities. About 78 percent of graduates in the humanities were employed (59 percent full time and 19 percent part time; figure 21). Forty-three percent were ever enrolled since graduation, and 15 percent were enrolled and not working. Occupations of the employed were dispersed, with the largest categories being administrative support (20 percent), educators (17 percent) and writers/artists (13 percent). Unemployment was 6.2 percent. Over half (57 percent) reported that their job was related to their major field, and 66 percent that the job had career potential. The majority (57 percent) were in jobs for which they reported a 4-year degree was not required. The average salary for full-time employed was $19,100.

Figure 21. Status of 1989-90 bachelor's degree recipients majoring in HUMANITIES: 1991

Employment status	
Employed	78%
Employed full time	59%
Employed part time	19%
Not working	22%
Looking for work	6%
Not looking for work	15%
Unemployment rate	6.2%
Percent unemployed	5.1%
Enrollment status	
Total enrolled	43%
Enrolled working	28%
Enrolled not working	15%



Occupations of employed (full and part time) [1]	Percent of employed reporting: Job related to major field	Job has career potential	4-yr degree not req'd	Mean annual salary: All employed [2]	Employed full time
Admin. support incl. cler.	37%	50%	72%	$16,100	$17,700
Educators	86%	83%	18%	$15,000	$19,200
Writers/artists	95%	83%	60%	$17,700	$20,800
Sales personnel	47%	64%	73%	$14,700	$17,400
Service personnel	19%	35%	91%	$12,500	$13,400
Business/managers	48%	72%	49%	$20,800	$21,700
Communications	81%	84%	31%	$19,000	$20,400
Technicians	66%	76%	50%	$23,000	$23,900
Crafts/operators/laborers	29%	45%	87%	$15,200	$16,900
Public affairs/ social services	68%	86%	40%	$16,800	$18,400
All humanities majors	**57%**	**66%**	**57%**	**$16,600**	**$19,100**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
NOTE: Details may not add to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

Psychology. Among psychology majors, 74 percent were employed (60 percent full time and 14 percent part time; figure 22). About half (50 percent) had enrolled in school since graduation, and 20 percent were enrolled and not working. Frequent occupations of employed psychology majors included administrative support (21 percent), public affairs/social services (20 percent), educators (14 percent), business/managers (10 percent), and sales (10 percent). Some were also employed as health professionals (5 percent), biological scientists (3 percent), and computer scientists (3 percent). Almost two-thirds (65 percent) indicated that their job was related to their major, and 69 percent indicated that the job had career potential. Just over half (53 percent) indicated that a 4-year degree was not required. The average salary was $19,200, and unemployment was 6.7 percent.

Figure 22. Status of 1989-90 bachelor's degree recipients majoring in PSYCHOLOGY: 1991

Employment status	
Employed	74%
Employed full time	60%
Employed part time	14%
Not working	26%
Looking for work	8%
Not looking for work	18%
Unemployment rate	6.7%
Percent unemployed	5.3%
Enrollment status	
Total enrolled	50%
Enrolled working	31%
Enrolled not working	20%

Occupations of employed (full and part time)[1]	Percent of employed reporting			Mean annual salary	
	Job related to major field	Job has career potential	4-yr degree not req'd	All employed[2]	Employed full time
Admin. support incl. cler.	41%	58%	74%	$15,800	$18,900
Public affairs/ social services	100%	83%	23%	$17,800	$18,800
Educators	91%	74%	26%	$16,100	$17,600
Business/managers	73%	83%	41%	$21,100	$22,700
Sales personnel	38%	58%	66%	$14,500	$17,000
Service personnel	47%	36%	94%	$13,800	$15,700
Health professionals	80%	76%	69%	$19,100	$19,300
Biological scientists	60%	100%	39%	$23,600	$27,500
Comp. Sci./progr.	31%	80%	70%	$22,300	$24,400
All psychology majors	**65%**	**69%**	**53%**	**$17,100**	**$19,200**

[1]Figure lists only occupations in which at least 3 percent of graduates were employed.
[2]Includes both full- and part-time employed.
NOTE: Details may not add to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

ENDNOTES

[1] The number represents a 1-year increase of 3.1 percent and a 4-year increase (since 1986) of 4.9 percent. Increases have not occurred in all fields. Within the natural sciences and engineering there was a drop of 3.9 percent since 1989 and 19.6 percent since 1986. U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey.

[2] Copies of previous RCG data tapes are available from Peter Stowe, U.S. Department of Education, National Center for Education Statistics, 555 New Jersey Avenue, NW, Room 321, Washington, DC 20208-5652.

[3] The total RCG sample also included 1,963 master's degree recipients for a total sample of 18,135. Master's degree recipients are not included in this report.

[4] The weighted response rate is the weighted number of completed surveys divided by the sum of the weighted number of completed surveys and nonrespondents.

[5] Comparisons of 1991 RCG with previous RCG studies and with U.S. national totals from the Current Population Survey are also made in this report. Differences cited are significant at the 95 percent confidence level using a Bonferroni t-test.

[6] The "other" category includes the following majors: agriculture and natural resources, architecture and environmental design, area studies and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

[7] By major, the percent whose only work was a graduate assistantship or work study ranged from 1 percent for those in business and management to 7 to 8 percent for biological sciences and math, computer sciences, and physical sciences graduates, fields with high graduate school enrollment (see appendix table A-14).

[8] Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-4.

[9] Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-9.

[10] Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-1.

[11] A comparable unemployment statistic for April 1991, from the Bureau of Labor Statistics, for those aged 16-24 with 4 years of college and not enrolled in school was 4.1 percent. Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-7.

[12] Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-4.

[13] Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-34.

[14] Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-31.

[15] In the 1987 RCG study the term "clerk" was used for the "administrative support including clerical" category.

[16] A small percentage of graduates (3 percent) were both employed full time and enrolled in school full time during the April 1991 employment reference week (appendix table A-11). If these graduates are excluded from the tabulation, the average salary for full-time employed graduates changed little, going from $23,600 to $23,700 for the total (appendix table A-12). The distribution by major field does not change significantly by this exclusion.

[17] Bureau of Labor Statistics, *Employment and Earnings*, Vol. 38, No. 5, May 1991, table a-31.

[18] Lawrence Mishel and Jared Bernstein, *Declining Wages for High School and College Graduates, Pay and Benefits by Education, Gender, Occupation and State, 1979-1991*, Economic Policy Institute, Briefing Paper, May 1992. Mishel and Bernstein note that while the declines have been most severe among the high school educated, both high school and college educated groups have experienced a decline in real wages since 1987. The decline for college educated males was 4.9 percent and for women was 1.9 percent for an overall decline of 3.1 percent compared with 6.0 percent for the total population. Among men, only those with advanced degrees (beyond bachelor's) had growing wages. They conclude, "Having a college degree no longer affords protection against falling wage trends."

[19] Commission on Manpower in Science and Technology, *Manpower Comments*, April/May 1992, page 17. The average salary reported by the publication *Graduating Nurse* for an RN level 1 in 1991 was the same as that found for health professions in RCG, $31,500. *Graduating Nurse* reported increases in nursing salaries for 1991 from the previous year of about 7 to 10 percent depending on level.

[20] Bureau of Labor Statistics, *Unpublished Tabulations from the Current Population Survey; 1991 Annual Averages*, table 17.

[21] This includes jobs such as administrative support including clerical, sales, services, crafts, operators, and laborers.

[22] The 1985 and 1987 RCG surveys asked "if a *college degree* was required" and found that about 36-37 percent indicated that a degree was not required. The 1991 survey had a question worded slightly differently, that asked "if a *4-year college degree* was required" and found 44 percent indicated that a degree was not required.

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APPENDIX A

DETAILED TABLES WITH STANDARD ERRORS

Table A-1.--Unweighted and weighted number of 1989-90 bachelor's degree graduates, by graduate characteristics: 1991

Characteristic	Unweighted number	Weighted estimate			
		Weighted number	Standard error	Weighted percent	Standard error
All bachelor's graduate	12,888	1,049,657	--	100.0	--
Gender					
Male	5,564	491,488	--	46.8	--
Female	7,324	558,169	--	53.2	--
Race/ethnicity					
American Indian/Native Alaskan	63	5,532	658	.5	.06
Asian/Pacific Islander	392	37,269	1,556	3.6	.15
Black, non-Hispanic	1,379	64,221	4,145	6.1	.39
Hispanic	753	39,573	2,273	3.8	.22
White, non-Hispanic	10,301	903,063	5,467	86.0	.52
Type of major field of study					
Professional fields	7,009	538,960	8,014	51.3	.76
Arts and sciences fields	4,476	380,666	7,789	36.3	.74
Other fields*	1,403	130,030	3,842	12.4	.37
Major field of study					
Business/management	2,682	252,976	7,186	24.1	.68
Education	2.361	104,715	--	10.0	--
Engineering	849	81,747	6,981	7.8	.67
Health professions	754	67,238	6,024	6.4	.57
Public affairs/social services	363	32,285	2,116	3.1	.20
Biological sciences	490	44,684	1,830	4.3	.17
Math, computer sciences, physical sciences	984	58,644	3,710	5.6	.35
Social sciences	1,102	101,003	3,665	9.6	.35
History	237	22,997	1,323	2.1	.12
Humanities	1,069	98,355	4,895	9.4	.47
Psychology	594	54,982	2,329	5.2	.22
Other fields*	1,403	130,030	3,842	12.4	.37
Age in December 1991					
20-23	3,331	282,769	8,474	26.9	.81
24-25	5,043	408,315	6,109	38.9	.58
26 and older	4,514	358,573	10,219	34.2	.97
Highest degree graduate expects to obtain					
Bachelor's degree	1,987	180,529	3,714	17.2	.35
Master's degree	8,147	647,334	4,639	61.7	.44
Doctoral degree	1,830	139,832	3,399	13.3	.32
First-professional degree	924	81,962	2,989	7.8	.28

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.
-- Zero standard error due to post-stratification.
NOTE: Details may not add to totals due to rounding.

Table A-2a.--Labor force status of bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991

Characteristic	Employed full time		Employed part time		Unemployed[2]		Not in labor force[3]			
							In school		Not in school	
	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error
All bachelor's graduates	74	.36	11	.27	4.0	.15	9	.23	3	.13
Gender										
Male	75	.54	8	.35	4.8	.29	10	.34	2	.16
Female	72	.42	13	.35	3.3	.17	8	.26	4	.22
Race/ethnicity										
American Indian/Native Alaskan	72	4.59	10	2.91	3.1	1.25	8	3.95	7	2.14
Asian/Pacific Islander	67	1.58	8	.75	3.6	.56	17	1.59	4	.91
Black, non-Hispanic	75	.99	10	.60	5.4	.60	7	.56	3	.30
Hispanic	72	1.95	10	1.05	5.2	.84	10	1.01	3	.63
White, non-Hispanic	74	.38	11	.30	3.9	.17	8	.23	3	.13
Type of major field of study										
Professional fields	82	.44	8	.29	3.5	.16	4	.22	3	.17
Arts and sciences fields	62	.64	14	.48	4.6	.27	15	.46	4	.24
Other fields[4]	74	.72	11	.50	4.4	.48	6	.37	4	.40
Major field of study										
Business/management	83	.57	6	.31	4.9	.30	3	.26	3	.31
Education	77	.74	15	.71	2.0	.23	3	.33	3	.28
Engineering	85	.95	3	.45	3.1	.42	8	.76	1	.38
Health professions	81	1.35	11	1.26	.9	.25	4	.60	2	.45
Public affairs/social services	77	2.06	11	1.23	4.3	.86	5	.90	2	.75
Biological sciences	51	1.72	12	1.00	2.7	.74	32	1.81	3	.55
Math, computer sciences, physical sciences	71	1.30	8	.60	4.2	.59	15	1.16	2	.38
Social sciences	68	.91	12	.58	4.2	.50	12	.84	3	.36
History	58	2.55	15	2.04	6.5	1.22	16	1.74	4	1.02
Humanities	59	1.32	19	1.22	5.1	.52	11	.86	5	.54
Psychology	60	1.64	14	1.34	5.3	.75	16	1.22	5	.55
Other fields[1]	74	.72	11	.50	4.4	.48	6	.37	4	.40
Age in December 1991										
20-23	68	.85	11	.55	3.3	.32	16	.62	3	.23
24-25	76	.47	10	.37	4.0	.24	7	.21	2	.17
26 and older	75	.60	10	.49	4.6	.24	5	.24	5	.23
Highest degree graduate expects to obtain										
Bachelor's degree	81	.63	9	.51	4.9	.44	1	.17	4	.40
Master's degree	79	.41	10	.32	4.0	.18	4	.17	3	.14
Doctoral degree	60	1.07	14	.83	3.9	.49	19	.60	3	.36
First-professional degree	44	1.29	12	.80	2.1	.41	39	1.53	2	.34

[1]Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.
[2]Includes those looking and available for work in April 1991 as a percent of total graduates.
[3]Includes those not employed who were not looking for work or were not available for work in April 1991.

Table A-2b.--Employment status and unemployment rate of 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991

Characteristic	Employed		Not employed		Not in labor force[2]		Unemployment rate[3]	
	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error
All bachelor's graduates	84	.29	16	.29	12	.24	4.5	.17
Gender								
Male	84	.42	16	.42	12	.34	5.4	.32
Female	85	.37	15	.37	12	.33	3.8	.20
Race/ethnicity								
American Indian/Native Alaskan	82	3.74	18	3.74	15	3.68	3.6	1.46
Asian/Pacific Islander	75	1.60	25	1.60	21	1.65	4.5	.70
Black, non-Hispanic	84	.76	16	.78	10	.64	6.1	.67
Hispanic	81	1.52	19	1.52	14	1.19	6.0	.98
White, non-Hispanic	85	.28	15	.28	11	.24	4.4	.19
Type of major field of study								
Professional fields	90	.29	10	.29	7	.24	3.8	.17
Arts and sciences fields	76	.63	24	.63	19	.50	5.7	.35
Other fields[1]	85	.52	15	.52	10	.51	4.9	.52
Major field of study								
Business/management	89	.48	11	.48	6	.37	5.2	.32
Education	92	.48	8	.48	6	.46	2.2	.25
Engineering	88	.75	12	.75	9	.68	3.4	.46
Health professions	92	.82	8	.82	7	.75	1.0	.27
Public affairs/social services	88	1.66	12	1.66	8	1.19	4.6	.94
Biological sciences	62	1.64	38	1.64	35	1.68	4.2	1.11
Math, computer sciences, physical sciences	79	1.07	21	1.07	17	1.21	5.1	.68
Social sciences	81	.96	19	.96	15	.79	4.9	.59
History	73	2.13	27	2.13	21	2.09	8.2	1.49
Humanities	78	1.29	22	1.29	17	1.16	6.2	.63
Psychology	74	1.64	26	1.64	21	1.38	6.7	.96
Other fields[1]	85	.52	15	.52	10	.51	4.9	.52
Age in December 1991								
20-23	79	.66	21	.66	18	.61	4.0	.39
24-25	87	.35	13	.35	9	.24	4.5	.27
26 and older	86	.43	14	.43	9	.29	5.1	.27
Highest degree graduate expects to obtain								
Bachelor's degree	90	.59	10	.59	5	.42	5.2	.47
Master's degree	88	.29	12	.29	8	.22	4.4	.19
Doctoral degree	74	.82	26	.82	22	.71	5.0	.62
First-professional degree	57	1.42	43	1.42	41	1.52	3.6	.68

[1]Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.
[2]Includes those not employed who were not looking for work or were not available for work in April 1991.
[3]Includes those both looking and available for work in April 1991 as a percent of those in the labor force.

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Table A-3.--Employment and looking for work status of 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991

Characteristic	Employed full time		Employed part time		Not employed looking		Not employed not looking	
	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error
All bachelor's graduates	74	.36	11	.27	5	.19	11	.22
Gender								
Male	75	.54	8	.35	6	.34	10	.32
Female	72	.42	13	.35	4	.20	11	.30
Race/ethnicity								
American Indian/Native Alaskan	72	4.59	10	2.91	3	1.25	15	3.68
Asian/Pacific Islander	67	1.58	8	.75	5	.87	20	1.58
Black, non-Hispanic	75	.99	10	.60	6	.65	9	.60
Hispanic	72	1.95	10	1.05	6	.92	13	1.08
White, non-Hispanic	74	.38	11	.30	5	.20	10	.22
Type of major field of study								
Professional fields	82	.44	8	.29	4	.18	6	.23
Arts and sciences fields	62	.64	14	.48	6	.37	17	.47
Other fields*	74	.72	11	.50	5	.49	10	.51
Major field of study								
Business/management	83	.57	6	.31	6	.34	5	.37
Education	77	.74	15	.71	3	.31	5	.39
Engineering	85	.95	3	.45	4	.48	8	.60
Health professions	81	1.35	11	1.26	2	.32	6	.72
Public affairs/social services	77	2.06	11	1.23	5	.91	7	1.15
Biological sciences	51	1.72	12	1.00	5	1.07	32	1.76
Math, computer sciences, physical sciences	71	1.30	8	.60	5	.69	15	1.26
Social sciences	68	.91	12	.58	6	.64	13	.67
History	58	2.55	15	2.04	9	1.45	18	1.94
Humanities	59	1.32	19	1.22	6	.63	15	1.11
Psychology	60	1.64	14	1.34	8	1.06	18	1.21
Other fields*	74	.72	11	.50	5	.49	10	.51
Age in December 1991								
20-23	68	.85	11	.55	6	.39	15	.60
24-25	76	.47	10	.37	5	.28	8	.25
26 and older	75	.60	10	.49	5	.28	9	.28
Highest degree graduate expects to obtain								
Bachelor's degree	81	.63	9	.51	5	.47	5	.41
Master's degree	79	.41	10	.32	5	.19	7	.20
Doctoral degree	60	1.07	14	.83	6	.56	20	.73
First-professional degree	44	1.29	12	.80	8	.72	36	1.53

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.
NOTE: Percentages across columns may not add to 100 due to rounding.

Table A-4.--Enrollment rates of nonemployed 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991

Characteristic	Proportion not employed		Enrollment rate of nonemployed bachelor's degree recipients	
	Percent	Standard error	Percent	Standard error
All bachelor's graduates	16	.29	68	1.09
Gender				
Male	16	.42	71	1.52
Female	15	.37	65	1.22
Race/ethnicity				
American Indian/Native Alaskan	18	3.74	54	13.96
Asian/Pacific Islander	25	1.60	80	3.28
Black, non-Hispanic	16	.78	59	3.03
Hispanic	19	1.52	71	3.42
White, non-Hispanic	15	.28	67	1.24
Type of major field of study				
Professional fields	10	.29	55	1.70
Arts and sciences fields	24	.63	77	1.23
Other fields*	15	.52	59	2.35
Major field of study				
Business/management	11	.48	43	2.45
Education	8	.48	59	2.76
Engineering	12	.75	76	3.51
Health professions	8	.82	69	4.92
Public affairs/social services	12	1.66	59	5.65
Biological sciences	38	1.64	91	2.08
Math, computer sciences, physical sciences	21	1.07	78	3.64
Social sciences	19	.96	74	2.90
History	27	2.13	77	3.92
Humanities	22	1.29	71	2.42
Psychology	26	1.64	76	2.49
Other fields*	15	.52	59	2.35
Age in December 1991				
20-23	21	.66	83	1.26
24-25	13	.35	65	1.72
26 and older	14	.43	52	1.77
Highest degree graduate expects to obtain				
Bachelor's degree	10	.59	26	2.92
Master's degree	12	.29	56	1.36
Doctoral degree	26	.82	85	1.60
First-professional degree	43	1.42	95	.85

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

Table A-5.--Enrollment in further education and work status of 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991

Characteristic	Ever enrolled since graduation		Ever enrolled full time		Ever enrolled employed		Ever enrolled not employed		Enrolled in degree program beyond bachelor's	
	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error
All bachelor's graduates	35	.50	17	.36	24	.40	11	.25	24	.46
Gender										
Male	34	.66	15	.46	22	.58	12	.36	24	.58
Female	35	.56	18	.43	25	.47	10	.29	24	.48
Race/ethnicity										
American Indian/Native Alaskan	37	4.91	16	4.32	27	4.14	10	3.93	28	4.91
Asian/Pacific Islander	43	2.09	18	1.13	23	1.23	20	1.59	31	1.68
Black, non-Hispanic	31	1.14	15	.89	22	1.02	9	.61	23	1.06
Hispanic	43	1.59	21	1.12	30	1.18	13	1.10	31	1.48
White, non-Hispanic	34	.53	16	.39	24	.43	10	.25	23	.46
Type of major field of study										
Professional fields	28	.56	17	.50	22	.52	6	.24	18	.50
Arts and sciences fields	46	.78	17	.50	28	.64	18	.52	34	.77
Other fields*	29	1.11	15	.69	21	.98	9	.51	18	.76
Major field of study										
Business/management	21	.73	13	.68	16	.74	5	.34	12	.62
Education	38	.83	27	.81	33	.84	5	.40	29	.70
Engineering	32	1.16	18	1.26	23	1.21	9	.68	23	1.25
Health professions	27	1.76	16	1.45	22	1.62	5	.69	20	1.44
Public affairs/social services	35	2.18	13	1.21	28	1.76	7	1.13	22	1.77
Biological sciences	64	1.89	17	1.41	30	1.28	34	1.85	47	2.13
Math, computer sciences, physical sciences	40	1.76	17	1.07	24	1.45	16	1.33	30	1.75
Social sciences	42	1.34	16	.83	28	.94	14	.88	30	1.28
History	50	2.79	17	1.90	30	2.36	21	2.00	37	2.61
Humanities	43	1.66	17	1.27	28	1.51	15	.93	28	1.28
Psychology	50	1.72	19	1.31	31	1.86	20	1.45	40	1.64
Other fields*	29	1.11	15	.69	21	.98	9	.51	18	.76
Age in December 1991										
20-23	41	.80	13	.61	23	.67	18	.63	31	.81
24-25	31	.57	16	.41	23	.50	9	.24	20	.47
26 and older	33	.85	20	.70	26	.74	7	.32	22	.69
Highest degree graduate expects to obtain										
Bachelor's degree	15	.56	10	.51	13	.55	3	.29	3	.29
Master's degree	31	.53	18	.42	24	.47	6	.22	20	.48
Doctoral degree	58	1.01	21	.88	36	.83	22	.65	49	.98
First-professional degree	68	1.44	9	.74	27	1.28	41	1.50	61	1.36

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

Table A-6.--Relationship of job to major field, career potential, and whether job required degree of employed 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991

Characteristic	Job related to major field		Job has career potential		4-year college degree not required for job	
	Percent	Standard error	Percent	Standard error	Percent	Standard error
All bachelor's graduates	76	.48	79	.38	44	.58
Gender						
Male	74	.66	81	.48	45	.93
Female	77	.64	78	.54	43	.68
Race/ethnicity						
American Indian/Native Alaskan	84	4.10	74	5.11	55	6.73
Asian/Pacific Islander	80	1.03	81	1.38	31	1.36
Black, non-Hispanic	75	1.11	76	1.17	49	1.27
Hispanic	74	1.65	76	1.78	41	2.07
White, non-Hispanic	76	.53	80	.40	44	.62
Type of major field of study						
Professional fields	85	.46	85	.42	39	.88
Arts and sciences fields	61	.95	71	.68	50	.68
Other fields*	74	.88	78	.92	51	1.08
Major field of study						
Business/management	81	.70	83	.60	47	.96
Education	87	.71	84	.77	24	1.00
Engineering	89	1.16	90	.74	19	1.50
Health professions	95	.84	92	.88	49	3.48
Public affairs/social services	71	2.18	71	2.15	52	2.20
Biological sciences	73	1.84	67	2.27	42	2.01
Math, computer sciences, physical sciences	86	1.08	85	1.07	33	2.65
Social sciences	53	1.32	72	1.01	52	1.13
History	30	2.77	60	3.37	63	2.75
Humanities	57	1.70	66	1.58	57	1.40
Psychology	65	1.54	69	1.51	53	1.87
Other fields*	74	.88	78	.92	51	1.08
Age in December 1991						
20-23	74	1.09	77	.74	39	.91
24-25	75	.61	79	.53	42	.78
26 and older	78	.55	81	.54	50	1.04
Highest degree graduate expects to obtain						
Bachelor's degree	74	.73	81	.81	56	1.00
Master's degree	78	.57	81	.39	41	.63
Doctoral degree	72	1.26	73	1.08	42	1.33
First-professional degree	63	1.50	65	1.48	44	1.83

Table A-6.--Relationship of job to major field, career potential, and whether job required degree of employed 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics: 1991 (continued)

Characteristic	Job related to major field		Job has career potential		4-year college degree not required for job	
	Percent	Standard error	Percent	Standard error	Percent	Standard error
Occupation						
Business/Managers	82	.90	89	.65	38	.95
Educators	92	.58	85	.79	16	.86
Engineers	94	.77	95	.65	13	1.47
Health professionals	95	.75	91	1.12	50	3.43
Public affairs/social services	90	1.57	83	1.47	23	1.77
Biological scientists	79	2.68	77	2.51	44	2.48
Math and physical scientists	92	2.43	92	1.70	11	1.79
Computer scientists and programmers	86	1.42	92	1.07	31	2.58
Communications	85	2.28	88	1.66	37	3.53
Writers, artists, etc.	85	2.12	80	2.11	55	3.02
Technicians	78	1.66	80	2.16	39	2.56
Administrative support/clerical	60	1.08	67	1.00	66	.90
Crafts/operators/laborers	45	2.91	62	2.53	79	1.55
Sales personnel	68	1.26	78	.98	53	1.50
Service personnel	42	1.46	48	1.51	85	.99
Other	47	2.68	85	2.18	29	3.25

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

Table A-7.--Job degree requirements and percent underemployed of employed 1989-90 bachelor's degree recipients 1 year after graduation, by major field of study: 1991

Major field of study	College degree not required for job				Underemployed[1] (Full time only)	
	Full and part time		Full time only			
	Percent	Standard error	Percent	Standard error	Percent	Standard error
Total	44	.58	40	.62	23	.41
Business/management	47	.96	44	1.10	28	.88
Education	24	1.00	20	1.04	11	.79
Engineering	19	1.50	17	1.39	7	.75
Health professions	49	3.48	46	3.61	4	.63
Public affairs/social services	52	2.20	50	2.26	35	2.14
Biological sciences	42	2.01	33	2.06	16	2.02
Math, computer sciences, physical sciences	33	2.65	30	2.90	10	1.25
Social sciences	52	1.13	46	1.35	31	1.23
History	63	2.75	57	3.34	39	2.85
Humanities	57	1.40	54	1.87	33	1.44
Psychology	53	1.87	48	2.09	28	1.82
Other fields[2]	51	1.08	47	1.14	29	.96

[1]Underemployed graduates include those who reported that a college degree was not required for the job and are employed full time in sales, service, administrative support/clerical, or crafts/operators/laborers.

[2]Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

Table A-8.–Average annual salary of 1989-90 bachelor's degree recipients employed 1 year after graduation, by graduate characteristics: 1991

Characteristic	Total employed		Average annual salary of full-time and part-time employed	
	Number	Standard error	Mean	Standard error
All bachelor's graduates	884,773	3,048	$21,870	$180
Gender				
Male	410,417	2,056	23,883	230
Female	474,356	2,054	20,128	204
Race/ethnicity				
American Indian/Native Alaskan	4,529	567	19,539	1,493
Asian/Pacific Islander	28,049	1,208	24,328	323
Black, non-Hispanic	54,147	3,487	21,074	274
Hispanic	32,142	2,193	22,280	408
White, non-Hispanic	765,905	5,140	21,833	193
Type of major field of study				
Professional fields	483,661	7,883	23,970	258
Arts and sciences fields	290,182	6,433	19,384	239
Other fields*	110,930	3,405	19,215	258
Major field of study				
Business/management	224,977	6,609	23,766	319
Education	96,241	499	17,503	167
Engineering	71,939	6,476	30,290	438
Health professions	62,018	5,754	29,616	793
Public affairs/social services	28,485	2,083	19,182	444
Biological sciences	27,921	1,385	18,373	375
Math, computer sciences, physical sciences	46,437	3,317	25,375	433
Social sciences	81,357	3,036	20,253	316
History	16,782	1,079	18,352	707
Humanities	77,049	4,065	16,642	346
Psychology	40,636	2,053	17,115	348
Other fields*	110,930	3,405	19,215	258
Age in December 1991				
20-23	222,549	6,791	19,703	202
24-25	354,114	5,449	20,918	271
26 and older	308,109	9,166	24,529	296
Highest degree graduate expects to obtain				
Bachelor's degree	162,547	3,396	22,883	339
Master's degree	572,580	4,468	22,056	194
Doctoral degree	103,228	2,822	20,038	282
First-professional degree	46,418	1,879	20,094	405

Table A-8.--Average annual salary of 1989-90 bachelor's degree recipients employed 1 year after graduation, by graduate characteristics: 1991 (continued)

Characteristic	Total employed		Average annual salary of full-time and part-time employed	
	Number	Standard error	Mean	Standard error
Occupation				
Business/Managers	128,671	3,244	$25,540	$328
Educators	123,528	2,277	16,961	138
Engineers	52,069	4,865	31,777	391
Health professionals	60,527	5,362	29,440	718
Public affairs/social services	32,204	1,729	18,322	256
Biological scientists	20,744	1,149	19,827	510
Math and physical scientists	10,356	757	25,682	541
Computer scientists and programmers	36,099	2,595	29,534	599
Communications	18,225	1,164	18,274	305
Writers, artists, etc.	21,268	1,739	19,798	637
Technicians	28,246	1,638	23,439	407
Administrative support/clerical	158,996	3,203	18,182	207
Crafts/operators/laborers	33,147	2,067	21,428	686
Sales personnel	93,668	2,677	22,067	270
Service personnel	53,186	1,569	15,146	379
Other	13,839	1,831	22,301	720

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.
NOTE: Details may not add to totals due to rounding.

Table A-9.--Average annual salary of 1989-90 bachelor's degree recipients employed full time 1 year after graduation, by graduate characteristics: 1991

Characteristic	Total employed full time		Annual salary of full-time employed	
	Number	Standard error	Mean	Standard error
All bachelor's graduates	774,199	3,801	$23,632	$180
Gender				
Male	369,796	2,657	25,432	220
Female	404,402	2,322	21,986	216
Race/ethnicity				
American Indian/Native Alaskan	3,982	574	21,238	1,454
Asian/Pacific Islander	25,153	1,170	25,911	350
Black, non-Hispanic	48,043	3,126	22,597	273
Hispanic	28,325	2,138	23,890	362
White, non-Hispanic	668,696	5,181	23,624	194
Type of major field of study				
Professional fields	440,047	7,556	25,289	265
Arts and sciences fields	237,496	5,592	21,725	218
Other fields*	96,656	2,885	20,773	270
Major field of study				
Business/management	210,491	6,379	24,727	324
Education	80,668	777	19,110	137
Engineering	69,609	6,388	30,933	392
Health professions	54,405	4,867	31,455	859
Public affairs/social services	24,875	1,932	20,801	466
Biological sciences	22,594	1,268	21,051	414
Math, computer sciences, physical sciences	41,752	3,146	27,156	399
Social sciences	68,783	2,611	22,213	327
History	13,295	907	21,315	606
Humanities	58,184	3,215	19,059	340
Psychology	32,889	1,740	19,154	314
Other fields*	96,656	2,885	20,773	270
Age in December 1991				
20-23	191,618	6,279	21,585	184
24-25	312,062	5,282	22,548	277
26 and older	270,519	8,037	26,332	303
Highest degree graduate expects to obtain				
Bachelor's degree	145,509	3,069	24,366	356
Master's degree	508,821	4,305	23,630	182
Doctoral degree	83,532	2,718	22,595	284
First-professional degree	36,336	1,567	23,108	426

Table A-9.--Average annual salary of 1989-90 bachelor's degree recipients employed full time 1 year after graduation, by graduate characteristics: 1991 (continued)

Characteristic	Total employed full time		Annual salary of full-time employed	
	Number	Standard error	Mean	Standard error
Occupation				
Business/Management	124,511	3,050	$25,961	$325
Educators	98,818	1,957	19,116	138
Engineers	51,087	4,780	31,974	377
Health professionals	53,049	4,482	30,971	794
Public affairs/social services	28,733	1,605	19,227	181
Biological scientists	18,616	1,147	21,325	477
Math and physical scientists	10,164	751	26,040	540
Computer scientists and programmers	34,552	2,523	30,419	601
Communications	16,336	1,062	19,584	354
Writers, artists, etc.	16,817	1,520	22,353	671
Technicians	26,052	1,523	24,708	373
Administrative support/clerical	135,050	2,766	19,946	197
Crafts/operators/laborers	28,245	1,882	23,558	743
Sales personnel	83,198	2,571	23,603	298
Service personnel	36,534	1,232	18,360	420
Other	12,436	1,825	24,097	825

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.
NOTE: Details may not add to totals due to rounding.

Table A-10.--Percentage distribution of 1989-90 bachelor's degree recipients employed full time and average annual salary 1 year after graduation, by gender, major field of study, and occupation

Characteristics	Total number employed full time		Percentage distribution				Average annual salary of full-time employed			
			Male		Female		Male		Female	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error	Average	Standard error	Average	Standard error
Total number	774,199	3,763	369,796	2,657	404,402	2,322	$25,432	$220	$21,986	$216
Type of major field of study										
Professional fields	57%	.85%	58%	1.06%	56%	.97%	27,118	309	23,577	306
Arts and sciences fields	31	.76	31	.94	30	.91	23,537	300	20,037	230
Other fields*	12	.37	11	.52	13	.43	22,095	490	19,735	293
Major field of study										
Business/management	27	.79	30	1.09	24	.78	25,927	436	23,343	322
Education	10	.10	5	.12	15	.17	21,009	300	18,559	132
Engineering	9	.80	17	1.40	2	.29	31,024	399	30,236	631
Health professions	7	.63	3	.37	11	.97	33,884	1,084	30,941	843
Public affairs/social services	3	.25	3	.33	3	.33	21,639	933	20,152	454
Biological sciences	3	.16	3	.23	3	.22	21,850	665	20,359	492
Math, computer sciences, physical sciences	5	.41	7	.65	3	.24	27,994	448	25,514	574
Social sciences	9	.34	10	.47	8	.35	24,212	530	19,995	333
History	2	.12	2	.19	1	.13	20,948	696	22,143	1,139
Humanities	8	.43	6	.50	9	.55	20,278	363	18,343	460
Psychology	4	.23	3	.18	6	.34	19,742	564	18,917	362
Other fields*	12	.37	11	.52	13	.43	22,095	490	19,735	293
Occupation										
Business/Management	16	.37	17	.62	15	.49	26,862	396	25,034	401
Educators	13	.27	7	.22	18	.46	20,325	269	18,717	135
Engineers	7	.60	12	1.08	1	.20	32,167	390	30,294	646
Health professionals	7	.58	3	.36	11	.88	32,270	1,155	30,658	781
Public affairs/social services	4	.21	2	.21	5	.32	19,252	433	19,216	236
Biological scientists	2	.15	3	.21	2	.18	20,568	764	22,281	470
Math and physical scientists	1	.10	2	.13	1	.11	26,416	761	25,539	704
Computer science and programming	4	.32	7	.50	2	.22	31,040	743	28,806	696
Communications	2	.14	2	.17	3	.20	19,861	662	19,416	566
Writers, artists, etc.	2	.20	2	.24	2	.24	22,309	724	22,396	1,085
Technicians	3	.19	4	.33	3	.23	25,846	561	23,176	435
Administrative support/clerical	17	.36	13	.49	22	.48	21,183	423	19,293	177
Crafts/operators/laborers	4	.24	7	.49	1	.10	24,312	807	18,466	1,401
Sales personnal	11	.34	13	.49	9	.40	25,590	453	20,902	348
Service personnel	5	.16	5	.26	4	.22	20,233	524	16,260	811
Other	2	.23	2	.41	1	.10	24,509	1,121	22,955	815

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.
NOTE: Percentages may not add to 100 due to rounding.

Table A-11.--Percentage distribution of enrollment status of graduates by labor force status: 1991

Enrollment status in April 1991	Labor force status in April 1991											
	Total		Employed full time		Employed part time		Unemployed		Not in labor force because of school		Not in labor force other reason	
	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error
Total	100	-	100	-	100	-	100	-	100	-	100	-
Full-time enrolled	13	.30	3	.15	27	1.09	11	1.31	91	.48	10	1.04
Part-time enrolled	9	1.04	9	.31	12	.61	7	1.18	6	.39	6	1.05
Not enrolled	78	1.49	88	.38	61	1.11	82	1.58	3	.30	85	1.49

NOTE: Percentages may not add to 100 due to rounding.

Table A-12.--Average salary and job characteristics for full-time employed 1989-90 bachelor's graduates who are not full-time enrolled in April 1991

Characteristic	Average full-time salary		Job related to major field		Job has career potential		4-year degree not required	
	Mean	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error
All bachelor's graduates	$23,697	$182	79	.46	84	.34	40	.63
Gender								
Male	25,494	223	77	.63	85	.43	41	.98
Female	22,052	215	81	.63	83	.52	39	.73
Race/ethnicity								
American Indian/Native Alaskan	21,755	1,478	86	4.42	78	5.39	56	7.26
Asian/Pacific Islander	25,961	324	83	1.23	86	1.39	26	1.34
Black, non-Hispanic	22,588	282	77	1.09	79	1.29	45	1.53
Hispanic	24,078	370	76	1.75	82	1.84	38	1.98
White, non-Hispanic	23,687	198	79	.51	84	.34	40	.66
Type of major field of study								
Professional fields	25,325	263	87	.46	87	.40	36	.91
Arts and sciences fields	21,814	219	65	.98	77	.65	45	.90
Other fields*	20,805	271	77	.94	82	.92	47	1.14
Major field of study								
Business/management	24,709	317	84	.71	85	.59	44	1.10
Education	19,156	138	89	.73	88	.74	20	1.08
Engineering	31,003	377	90	.95	92	.68	18	1.36
Health professions	31,642	871	97	.62	95	.72	46	3.67
Public affairs/social services	20,840	472	73	2.47	75	2.54	49	2.30
Biological sciences	21,358	427	80	1.99	76	2.34	31	2.08
Math, computer sciences, physical sciences	27,395	396	88	1.18	89	1.08	30	2.89
Social sciences	22,301	335	56	1.35	78	1.07	46	1.36
History	20,808	605	31	3.26	68	3.32	58	3.49
Humanities	19,096	341	58	1.93	72	1.78	55	1.86
Psychology	19,164	338	69	1.99	76	1.40	47	2.18
Other fields*	20,805	271	77	.94	82	.92	47	1.14
Age in December 1991								
20-23	21,645	177	78	1.08	83	.65	33	.95
24-25	22,619	279	79	.56	84	.58	37	.85
26 and older	26,416	305	80	.55	84	.52	48	1.06
Highest degree graduate expects to obtain								
Bachelor's degree	24,395	357	77	.78	85	.81	53	1.05
Master's degree	23,671	183	81	.54	85	.36	37	.68
Doctoral degree	22,768	285	77	1.40	80	1.05	35	1.49
First-professional degree	23,207	412	70	1.73	75	1.79	37	1.99

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

Table A-13a.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in **business and management**, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part*time	Annual income full*time
			Percent	Percent	Percent	Mean	Mean
Total business majors	224,977	100	81	83	47	$23,766	$24,727
Business/Managers	74,714	33	92	91	31	26,545	26,673
Educators	3,130	1	*	*	*	*	*
Engineers	2,947	1	*	*	*	*	*
Health professionals	564	**	*	*	*	*	*
Public affairs/social services	1,012	**	*	*	*	*	*
Biological scientists	1,308	1	*	*	*	*	*
Math and physical scientists	3,730	2	*	*	*	*	*
Computer scientists and programmers	8,415	4	86	94	35	29,703	30,141
Communications	606	**	*	*	*	*	*
Writers, artists, etc.	1,460	1	*	*	*	*	*
Technicians	3,062	1	*	*	*	*	*
Administrative support/clerical	64,571	29	78	77	58	20,006	21,213
Crafts/operators/laborers	8,739	4	48	68	78	24,023	26,512
Sales personnel	40,657	18	86	84	46	23,892	24,688
Service personnel	7,699	3	44	54	86	17,937	21,337
Other	2,364	1	*	*	*	*	*
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	6,609	***	.70	.60	.96	$319	$324
Business/Managers	2,890	.80	.85	.80	1.40	406	418
Educators	415	.19	*	*	*	*	*
Engineers	545	.24	*	*	*	*	*
Health professionals	212	*	*	*	*	*	*
Public affairs/social services	364	*	*	*	*	*	*
Biological scientists	378	.16	*	*	*	*	*
Math and physical scientists	545	.24	*	*	*	*	*
Computer scientists and programmers	805	.32	1.96	1.30	4.76	1,346	1,359
Communications	174	*	*	*	*	*	*
Writers, artists, etc.	243	.11	*	*	*	*	*
Technicians	397	.17	*	*	*	*	*
Administrative support/clerical	2,456	.74	1.28	1.29	1.59	369	347
Crafts/operators/laborers	891	.37	5.15	4.62	3.57	2,036	2,178
Sales personnel	1,875	.63	1.12	1.35	2.45	479	512
Service personnel	689	.31	4.76	4.56	2.76	1,678	2,126
Other	410	.19	*	*	*	*	*

*Occupation contains less than 3 percent of the total.
**Estimate less than 0.5.
***Zero standard error.
NOTE: Details may not add to totals and percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13b.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in education, by occupation: 1991

Occupation	Total number estimates	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total education majors	96,241	100	87	84	24	$17,503	$19,110
Business/Managers	2,403	2	•	•	•	•	•
Educators	73,885	77	99	90	10	17,596	19,116
Engineers	156	••	•	•	•	•	•
Health professionals	1,299	1	•	•	•	•	•
Public affairs/social services	1,246	1	•	•	•	•	•
Biological scientists	496	1	•	•	•	•	•
Math and physical scientists	47	••	•	•	•	•	•
Computer scientists and programmers	96	••	•	•	•	•	•
Communications	38	••	•	•	•	•	•
Writers, artists, etc.	510	1	•	•	•	•	•
Technicians	349	••	•	•	•	•	•
Administrative support/clerks	6,702	7	42	67	80	16,231	18,185
Crafts/operators/laborers	1,623	2	•	•	•	•	•
Sales personnel	2,629	3	28	56	81	19,344	18,897
Service personnel	3,886	4	50	28	83	11,939	14,270
Other	878	1	•	•	•	•	•
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	499	•••	.71	.77	1.00	$167	$137
Business/Managers	270	.28	•	•	•	•	•
Educators	1,076	.93	.18	.61	.82	159	122
Engineers	47	•	•	•	•	•	•
Health professionals	187	.19	•	•	•	•	•
Public affairs/social services	190	.20	•	•	•	•	•
Biological scientists	52	.05	•	•	•	•	•
Math and physical scientists	3	•	•	•	•	•	•
Computer scientists and programmers	47	•	•	•	•	•	•
Communications	2	•	•	•	•	•	•
Writers, artists, etc.	100	.10	•	•	•	•	•
Technicians	72	•	•	•	•	•	•
Administrative support/clerks	396	.42	3.42	3.06	2.58	482	548
Crafts/operators/laborers	237	.25	•	•	•	•	•
Sales personnel	319	.33	4.10	5.01	2.83	1,398	1,318
Service personnel	346	.36	4.23	4.82	3.99	656	741
Other	168	.17	•	•	•	•	•

•Occupation contains less than 3 percent of the total.
••Estimate less than 0.5.
•••Zero standard error.
NOTE: Details may not add to totals and percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13c.--Job characteristics 1 year after graduation of 1989*90 bachelor's degree recipients with majors in engineering, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total engineering majors	71,939	100	89	90	19	$30,290	$30,933
Business/Managers	5,096	7	84	91	30	28,859	29,268
Educators	899	1	*	*	*	*	*
Engineers	41,845	58	98	96	7	32,170	32,348
Health professionals	309	**	*	*	*	*	*
Public affairs/social services	41	**	*	*	*	*	*
Biological scientists	591	1	*	*	*	*	*
Math and physical scientists	290	**	*	*	*	*	*
Computer scientists and programmers	4,410	6	91	89	19	30,601	31,663
Communications	111	**	*	*	*	*	*
Writers, artists, etc.	689	1	*	*	*	*	*
Technicians	4,988	7	86	93	24	31,447	32,283
Administrative support/clerical	2,823	4	62	72	51	25,881	31,152
Crafts/operators/laborers	5,076	7	71	60	67	25,235	26,084
Sales personnel	2,327	3	76	91	19	29,959	29,959
Service personnel	422	1	*	*	*	*	*
Other	2,023	3	51	90	20	25,237	25,237
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	6,476	***	1.16	.74	1.50	$438	$392
Business/Managers	622	.81	3.34	2.29	4.32	979	938
Educators	172	.29	*	*	*	*	*
Engineers	4,670	2.14	.63	.69	1.17	364	330
Health professionals	180	*	*	*	*	*	*
Public affairs/social services	41	*	*	*	*	*	*
Biological scientists	196	.27	*	*	*	*	*
Math and physical scientists	41	*	*	*	*	*	*
Computer scientists and programmers	666	.71	2.58	3.09	3.91	866	566
Communications	113	*	*	*	*	*	*
Writers, artists, etc.	235	.31	*	*	*	*	*
Technicians	594	.63	3.59	3.65	7.00	1,028	766
Administrative support/clerical	280	.43	5.10	4.67	4.89	2,045	1,936
Crafts/operators/laborers	568	.78	4.38	5.30	4.46	1,400	1,333
Sales personnel	483	.62	7.16	6.47	6.56	1,532	1,532
Service personnel	105	.14	*	*	*	*	*
Other	777	.99	6.64	1.61	4.70	2,964	2,964

*Occupation contains less than 3 percent of the total.
** Estimate less than 0.5.
***Zero standard error.
NOTE: Details may not add to totals and percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

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Table A-13d.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in **health professions**, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total health professions majors	62,018	100	95	92	49	$29,616	$31,455
Business/Managers	2,240	4	89	100	62	29,654	32,700
Educators	1,505	2	•	•	•	•	•
Engineers	••	••	•	•	•	•	•
Health professionals	49,359	80	99	95	48	31,465	32,691
Public affairs/social services	726	1	•	•	•	•	•
Biological scientists	1,930	3	93	93	30	24,603	26,776
Math and physical scientists	201	••	•	•	•	•	•
Computer scientists and programmers	39	••	•	•	•	•	•
Communications	106	••	•	•	•		•
Writers, artists, etc.	111	••	•	•	•	•	•
Technicians	789	1	•	•	•	•	•
Administrative support/clerical	2,931	5	44	49	77	16,948	22,751
Crafts/operators/laborers	100	••	•	•	•	•	•
Sales personnel	887	1	•	•	•	•	•
Service personnel	1,014	2	•	•	•	•	•
Other	80	••	•	•	•	•	•
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	5,754	•••	.84	.88	3.48	$793	$859
Business/Managers	405	.62	3.92	•	10.61	4,201	4,145
Educators	290	.47	•	•	•	•	•
Engineers	•	•	•	•	•	•	•
Health professionals	5,258	1.71	.24	1.20	3.84	755	858
Public affairs/social services	119	.24	•	•	•	•	•
Biological scientists	364	.55	5.69	5.58	8.87	1,594	819
Math and physical scientists	102	•	•	•	•	•	•
Computer scientists and programmers	2	•	•	•	•	•	•
Communications	106	•	•	•	•	•	•
Writers, artists, etc.	110	•	•	•	•	•	•
Technicians	210	.33	•	•	•	•	•
Administrative support/clerical	330	.63	6.47	6.60	6.25	1,292	1,028
Crafts/operators/laborers	100	•	•	•	•	•	•
Sales personnel	183	.27	•	•	•	•	•
Service personnel	157	.35	•	•	•	•	•
Other	41	•	•	•	•	•	•

•Occupation contains less than 3 percent of the total.
••Estimate less than 0.5.
•••Zero standard error.
NOTE: Percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13e.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in public affairs and social services, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total public affairs/social services majors	28,485	100	71	71	52	$19,182	$20,801
Business/Management	1,907	7	53	67	69	23,613	26,901
Educators	1,245	4	67	48	36	12,900	16,627
Engineers	**	**	*	*	*	*	*
Health professionals	571	2	*	*	*	*	*
Public affairs/social services	8,915	31	98	82	15	18,245	19,251
Biological scientists	445	2	*	*	*	*	*
Math and physical scientists	94	**	*	*	*	*	*
Computer scientists and programmers	246	1	*	*	*	*	*
Communications	101	**	*	*	*	*	*
Writers, artists, etc.	675	2	*	*	*	*	*
Technicians	620	2	*	*	*	*	*
Administrative support/clerical	3,552	12	58	72	73	16,898	17,387
Crafts/operators/laborers	1,483	5	14	58	86	21,644	22,237
Sales personnel	950	3	15	60	54	21,554	21,554
Service personnel	7,271	26	78	74	76	19,196	21,644
Other	410	1	*	*	*	*	*
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	2,083	***	2.18	2.15	2.20	$444	$466
Business/Managers	260	.93	8.96	7.53	7.86	3,817	3,962
Educators	356	1.16	12.24	10.25	14.06	1,865	1,723
Engineers	*	*	*	*	*	*	*
Health professionals	140	.47	*	*	*	*	*
Public affairs/social services	851	2.17	.45	3.69	3.52	492	412
Biological scientists	277	.93	*	*	*	*	*
Math and physical scientists	42	*	*	*	*	*	*
Computer scientists and programmers	112	.39	*	*	*	*	*
Communications	101	*	*	*	*	*	*
Writers, artists, etc.	218	.74	*	*	*	*	*
Technicians	109	.40	*	*	*	*	*
Administrative support/clerical	514	1.66	6.58	8.32	5.69	842	860
Crafts/operators/laborers	353	1.13	8.61	12.62	8.61	2,966	3,178
Sales personnel	211	.71	4.84	12.56	11.59	1,754	1,754
Service personnel	941	2.29	2.66	4.08	3.76	813	810
Other	178	.65	*	*	*	*	*

*Occupation contains less than 3 percent of the total.
**Estimate less than 0.5.
***Zero standard error.
NOTE: Percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13f.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in **biological sciences**, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total biological sciences majors	27,921	100	73	67	42	$18,373	$21,051
Business/Management	2,203	8	75	76	39	24,163	24,637
Educators	2,392	9	86	72	26	15,801	18,490
Health professionals	1,968	7	79	66	67	17,567	21,110
Public affairs/social services	309	1	•	•	•	•	•
Biological scientists	7,525	27	95	75	21	19,930	21,099
Math and physical scientists	1,135	4	91	82	9	22,079	22,079
Computer scientists and programmers	166	1	•	•	•	•	•
Writers, artists, etc.	211	1	•	•	•	•	•
Technicians	2,845	10	92	71	28	18,437	19,966
Administrative support/clerical	3,264	12	42	39	78	13,769	17,622
Crafts/operators/laborers	1,206	4	45	37	75	18,867	23,740
Sales personnel	2,449	9	37	64	55	18,012	20,832
Service personnel	1,699	6	60	74	64	13,606	19,630
Other	550	2	•	•	•	•	•
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	1,385	***	1.84	2.27	2.01	$375	$414
Business/Managers	412	1.37	9.15	7.69	10.94	1,661	1,445
Educators	328	1.12	4.48	7.72	7.48	1,073	857
Health professionals	394	1.35	9.00	9.49	8.20	1,689	1,711
Public affairs/social services	181	.65	•	•	•	•	•
Biological scientists	643	1.96	1.88	2.78	2.56	487	506
Math and physical scientists	300	1.11	9.08	8.02	2.39	1,036	1,036
Computer scientists and programmers	14	.06	•	•	•	•	•
Writers, artists, etc.	159	.56	•	•	•	•	•
Technicians	514	1.73	1.63	6.79	6.27	683	1,011
Administrative support/clerical	385	1.20	5.10	6.47	4.27	970	938
Crafts/operators/laborers	353	1.24	12.47	11.97	12.96	3,749	4,124
Sales personnel	347	1.24	8.37	7.21	8.24	1,176	1,050
Service personnel	377	1.30	10.93	9.60	10.05	2,022	2,984
Other	146	.51	•	•	•	•	•

*Occupation contains less than 3 percent of the total.
** Estimate less than 0.5.
***Zero standard error.
NOTE: Details may not add to totals and percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13g.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in **math, computer sciences, and physical sciences**, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total math, computer sciences, physical sciences majors	46,437	100	86	85	33	$25,375	$27,156
Business/Management	2,817	6	82	93	47	25,793	26,913
Educators	5,320	11	88	77	19	17,459	20,247
Engineers	2,411	5	90	100	20	32,630	32,993
Health professionals	494	1	•	•	•	•	•
Public affairs/social services	106	••	•	•	•	•	•
Biological scientists	1,439	3	90	87	21	25,020	26,145
Math and physical scientists	2,797	6	97	95	10	26,673	27,302
Computer scientists and programmers	18,182	39	98	97	24	30,273	30,520
Communications	100	••	•	•	•	•	•
Writers, artists, etc.	381	1	•	•	•	•	•
Technicians	1,970	4	95	83	35	20,778	23,562
Administrative support/clerical	5,277	11	71	60	50	19,416	21,840
Crafts/operators/laborers	1,225	3	47	65	63	26,453	30,805
Sales personnel	1,655	4	46	59	73	21,155	25,549
Service personnel	1,228	3	19	33	85	15,284	19,030
Other	1,035	2	•	•	•	•	•
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	3,317	•••	1.08	1.07	2.65	$433	$399
Business/Managers	346	.78	6.02	2.20	5.14	1,942	1,840
Educators	349	1.16	2.81	2.85	3.05	568	653
Engineers	309	.56	4.11	•	5.33	1,329	1,357
Health professionals	177	.38	•	•	•	•	•
Public affairs/social services	51	•	•	•	•	•	•
Biological scientists	225	.55	5.61	6.09	6.75	1,902	1,924
Math and physical scientists	312	.80	2.59	.57	2.38	624	624
Computer scientists and programmers	2,286	2.53	.67	.96	4.56	488	479
Communications	50	•	•	•	•	•	•
Writers, artists, etc.	118	.26	•	•	•	•	•
Technicians	264	.51	.82	4.02	6.88	831	917
Administrative support/clerical	547	1.18	3.90	4.43	4.38	700	697
Crafts/operators/laborers	286	.56	11.89	11.99	9.75	3,404	3,533
Sales personnel	254	.41	13.60	9.00	5.54	1,744	2,295
Service personnel	301	.57	10.41	11.94	10.42	2,479	2,588
Other	317	.65	•	•	•	•	•

•Occupation contains less than 3 percent of the total.
•• Estimate less than 0.5.
•••Zero standard error.
NOTE: Percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13h.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in **social sciences**, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total social sciences majors	81,357	100	53	72	52	$20,253	$22,213
Business/Managers	14,481	18	64	89	31	24,981	25,834
Educators	5,119	6	67	68	31	15,634	18,447
Engineers	778	1	*	*	*	*	*
Health professionals	944	1	*	*	*	*	*
Public affairs/social services	6,179	8	89	77	22	19,134	19,455
Biological scientists	701	1	*	*	*	*	*
Math and physical scientists	1,119	1	*	*	*	*	*
Computer scientists and programmers	1,788	2	*	*	*	*	*
Communications	1,131	1	*	*	*	*	*
Writers, artists, etc.	1,457	2	*	*	*	*	*
Technicians	3,280	4	52	67	36	21,398	24,457
Administrative support/clerical	20,076	25	49	68	68	17,447	19,172
Crafts/operators/laborers	2,950	4	18	61	83	19,673	22,624
Sales personnel	10,271	13	48	77	50	21,592	23,758
Service personnel	8,535	10	32	44	89	16,781	20,374
Other	2,548	3	43	84	36	18,627	21,226
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	3,036	***	1.32	1.01	1.13	$316	$327
Business/Managers	1,052	.93	3.36	1.97	3.16	757	755
Educators	500	.59	5.08	4.75	5.18	804	656
Engineers	259	.31	*	*	*	*	*
Health professionals	181	.21	*	*	*	*	*
Public affairs/social services	513	.62	3.54	3.81	4.01	346	362
Biological scientists	106	.14	*	*	*	*	*
Math and physical scientists	175	.23	*	*	*	*	*
Computer scientists and programmers	329	.39	*	*	*	*	*
Communications	184	.22	*	*	*	*	*
Writers, artists, etc.	287	.34	*	*	*	*	*
Technicians	445	.53	6.06	5.80	5.63	1,606	1,645
Administrative support/clerical	1,094	1.11	3.17	2.64	2.80	349	337
Crafts/operators/laborers	433	.49	2.60	5.55	3.23	1,279	1,130
Sales personnel	824	.93	3.18	2.56	3.43	661	672
Service personnel	641	.65	3.57	3.62	2.25	846	962
Other	616	.74	6.61	5.13	6.89	1,591	1,112

*Occupation contains less than 3 percent of the total.
** Estimate less than 0.5.
***Zero standard error.
NOTE: Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13i.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in history, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total history majors	16,782	100	30	60	53	$18,352	$21,315
Business/Managers	1,363	8	15	92	42	28,425	28,425
Educators	2,853	17	71	63	13	16,174	18,619
Engineers	**	**	*	*	*	*	*
Health professionals	37	**	*	*	*	*	*
Public affairs/social services	646	4	64	78	60	18,060	20,893
Biological scientists	640	4	*	67	100	14,061	18,666
Math and physical scientists	223	1	*	*	*	*	*
Computer scientists and programmers	200	1	*	*	*	*	*
Communications	610	4	40	60	40	11,737	14,607
Writers, artists, etc.	197	1	*	*	*	*	*
Technicians	673	4	50	51	44	20,136	20,136
Administrative support/clerical	4,280	26	22	43	86	15,516	18,201
Crafts/operators/laborers	660	4	*	51	100	18,172	18,172
Sales personnel	2,104	13	24	73	67	25,516	26,725
Service personnel	1,554	9	6	26	100	8,943	13,793
Other	742	4	19	100	41	21,758	24,467
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	1,079	***	2.77	3.37	2.75	$707	$606
Business/Managers	183	1.04	10.22	8.23	7.13	1,546	1,546
Educators	419	2.13	7.34	7.41	5.13	947	829
Engineers	*	*	*	*	*	*	*
Health professionals	2	*	*	*	*	*	*
Public affairs/social services	102	.60	6.75	9.57	7.30	1,624	417
Biological scientists	256	1.47	*	22.62	*	3,608	3,207
Math and physical scientists	147	.86	*	*	*	*	*
Computer scientists and programmers	143	.84	*	*	*	*	*
Communications	230	1.29	18.90	15.32	15.32	1,293	1,026
Writers, artists, etc.	9	.09	*	*	*	*	*
Technicians	143	.85	11.52	10.83	12.62	1,559	1,559
Administrative support/clerical	526	2.65	5.30	5.59	4.81	1,019	915
Crafts/operators/laborers	314	1.79	*	11.14	*	6,153	6,153
Sales personnel	288	1.67	5.72	5.08	6.38	1,546	1,597
Service personnel	305	1.85	4.57	9.33	*	1,308	2,261
Other	137	.86	4.13	*	8.51	1,015	1,134

*Occupation contains less than 3 percent of the total.
** Estimate less than 0.5.
***Zero standard error.
NOTE: Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13j.–Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in **humanities**, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total humanities majors	77,049	100	57	66	57	$16,642	$19,059
Business/Managers	6,473	8	48	72	49	20,777	21,661
Educators	12,788	17	86	83	18	14,965	19,213
Engineers	531	1	•	•	•	•	•
Health professionals	515	1	•	•	•	•	•
Public affairs/social services	2,542	3	68	86	40	16,805	18,362
Biological scientists	820	1	•	•	•	•	•
Math and physical scientists	111	••	•	•	•	•	•
Computer scientists and programmers	441	1	•	•	•	•	•
Communications	3,748	5	81	84	31	18,983	20,439
Writers, artists, etc.	9,713	13	95	83	60	17,744	20,803
Technicians	3,246	4	66	76	50	23,013	23,921
Administrative support/clerical	15,451	20	37	50	72	16,051	17,687
Crafts/operators/laborers	3,379	4	29	45	87	15,212	16,948
Sales personnel	7,840	10	47	64	73	14,743	17,369
Service personnel	7,893	10	19	35	91	12,483	13,447
Other	1,558	2	•	•	•	•	•
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	4,065	•••	1.71	1.58	1.40	$346	$340
Business/Managers	597	.71	5.27	3.60	4.21	765	816
Educators	1,104	1.23	2.54	2.70	1.97	608	466
Engineers	223	.28	•	•	•	•	•
Health professionals	303	.39	•	•	•	•	•
Public affairs/social services	570	.72	9.55	6.86	8.87	1,562	1,493
Biological scientists	230	.29	•	•	•	•	•
Math and physical scientists	109	•	•	•	•	•	•
Computer scientists and programmers	197	.26	•	•	•	•	•
Communications	726	.87	4.83	4.51	6.44	841	928
Writers, artists, etc.	1,293	1.42	1.79	2.86	4.25	1,304	1,538
Technicians	611	.72	8.08	9.23	6.66	770	835
Administrative support/clerical	1,096	1.12	2.45	3.05	3.07	379	385
Crafts/operators/laborers	434	.47	5.30	7.80	4.28	1,121	1,368
Sales personnel	864	1.02	4.95	4.96	4.19	872	810
Service personnel	813	.98	3.19	3.95	2.88	939	1,099
Other	335	.41	•	•	•	•	•

*Occupation contains less than 3 percent of the total.
** Estimate less than 0.5.
***Zero standard error.
NOTE: Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13k.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in psychology, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total psychology majors	40,636	100	65	69	53	$17,115	$19,154
Business/Managers	3,921	10	73	83	41	21,120	22,659
Educators	5,838	14	91	74	26	16,096	17,609
Engineers	**	**	*	*	*	*	*
Health professionals	2,102	5	80	76	69	19,095	19,280
Public affairs/social services	7,942	20	100	83	23	17,798	18,846
Biological scientists	1,022	3	60	100	39	23,555	27,511
Math and physical scientists	**	**	*	*	*	*	*
Computer scientists and programmers	1,028	3	31	80	70	22,300	24,376
Communications	**	**	*	*	*	*	*
Writers, artists, etc.	319	1	*	*	*	*	*
Technicians	1,011	2	*	*	*	*	*
Administrative support/clerical	8,497	21	41	58	74	15,782	18,858
Crafts/operators/laborers	980	2	*	*	*	*	*
Sales personnel	4,090	10	38	58	66	14,506	17,013
Service personnel	3,507	9	47	36	94	13,748	15,669
Other	380	1	*	*	*	*	*
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	2,053	***	1.54	1.51	1.87	$348	$314
Business/Managers	411	.93	5.59	4.40	5.47	1,096	1,091
Educators	730	1.53	3.21	3.67	4.85	593	637
Engineers	*	*	*	*	*	*	*
Health professionals	353	.87	6.39	7.22	6.75	1,383	1,257
Public affairs/social services	678	1.33	.04	2.70	3.07	289	280
Biological scientists	352	.85	15.03	*	18.11	5,124	5,617
Math and physical scientists	*	*	*	*	*	*	*
Computer scientists and programmers	249	.59	10.71	8.19	9.23	3,036	2,561
Communications	*	*	*	*	*	*	*
Writers, artists, etc.	170	.42	*	*	*	*	*
Technicians	328	.80	*	*	*	*	*
Administrative support/clerical	923	1.79	4.42	3.78	3.85	611	635
Crafts/operators/laborers	208	.49	*	*	*	*	*
Sales personnel	416	1.07	4.63	5.14	4.68	780	662
Service personnel	328	.87	4.96	4.69	3.09	897	877
Other	114	.27	*	*	*	*	*

*Occupation contains less than 3 percent of the total.
** Estimate less than 0.5.
***Zero standard error.
NOTE: Details may not add to totals and percentages may not add to 100 due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-13l.--Job characteristics 1 year after graduation of 1989-90 bachelor's degree recipients with majors in other fields, by occupation: 1991

Occupation	Total number	Percent	Job related to degree	Job has career potential	Degree not required	Annual income full and part time	Annual income full time
			Percent	Percent	Percent	Mean	Mean
Total other fields	110,930	100	74	78	51	$19,215	$20,773
Business/Managers	11,054	10	77	88	45	22,664	22,598
Educators	8,555	8	84	81	26	16,924	20,075
Engineers	3,402	3	88	89	21	23,936	24,565
Health professionals	2,365	2	•	•	•	•	•
Public affairs/social services	2,541	2	•	•	•	•	•
Biological scientists	3,828	3	94	89	52	17,937	18,849
Math and physical scientists	608	1	•	•	•	•	•
Computer scientists and programmers	1,087	1	•	•	•	•	•
Communications	11,676	11	93	90	36	17,842	18,989
Writers, artists, etc.	5,544	5	89	84	34	20,024	20,728
Technicians	5,412	5	92	88	38	20,395	21,196
Administrative support/clerical	21,573	19	56	65	71	16,754	18,065
Crafts/operators/laborers	5,728	5	65	69	76	19,673	21,280
Sales personnel	17,809	16	74	82	53	22,247	23,713
Service personnel	8,478	8	43	51	86	14,177	18,339
Other	1,273	1	•	•	•	•	•
Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error	Standard error
Total	3,405	***	.88	.92	1.08	$258	$270
Business/Managers	928	.74	3.22	2.08	4.25	562	548
Educators	721	.59	2.80	3.35	3.32	626	627
Engineers	321	.29	3.78	1.17	3.95	908	920
Health professionals	384	.33	•	•	•	•	•
Public affairs/social services	299	.26	•	•	•	•	•
Biological scientists	684	.61	2.94	2.98	5.68	962	898
Math and physical scientists	148	.13	•	•	•	•	•
Computer scientists and programmers	239	.21	•	•	•	•	•
Communications	838	.73	1.43	1.94	3.85	474	485
Writers, artists, etc.	701	.63	.11	3.91	4.04	415	457
Technicians	616	.52	2.59	3.33	5.23	821	799
Administrative support/clerical	964	.82	2.66	2.18	2.57	278	221
Crafts/operators/laborers	1,168	1.00	4.98	4.59	3.29	1,145	1,160
Sales personnel	1,151	1.00	1.96	1.84	2.19	720	863
Service personnel	717	.57	3.05	3.00	2.91	784	918
Other	169	.15	•	•	•	•	•

*Occupation contains less than 3 percent of the total.
**Estimate less than 0.5.
***Zero standard error.
NOTE: Details may not add to totals due to rounding. Some of the standard errors may have an insufficient number of degrees of freedom for reporting purposes. Large standard errors are due to a small number of distinct replicates.

Table A-14.--Assistantship and work status of 1989-90 bachelor's degree recipients 1 year after graduation: 1991

Characteristic	Have assistantship and no other job		Have assistantship and also other job		No assistantship (all other graduates)	
	Percent	Standard error	Percent	Standard error	Percent	Standard error
All bachelor's graduates	3	.14	1	.08	96	.18
Gender						
Male	3	.20	1	.12	96	.25
Female	3	.15	1	.09	96	.19
Race/ethnicity						
American Indian/Native Alaskan	2	1.82	4	1.98	94	2.60
Asian/Pacific Islander	5	.50	-	.03	95	.51
Black, non-Hispanic	3	.31	1	.18	96	.36
Hispanic	3	.54	1	.52	96	.77
White, non-Hispanic	3	.14	1	.08	96	.19
Type of major field of study						
Professional fields	2	.11	1	.09	97	.16
Arts and sciences fields	5	.28	2	.15	94	.36
Other fields*	3	.29	1	.14	97	.34
Major field of study						
Business/management	1	.17	-	.07	99	.19
Education	2	.26	1	.14	97	.29
Engineering	5	.41	1	.33	94	.49
Health professions	1	.28	-	.20	98	.27
Public affairs/social services	1	.39	3	.56	96	.68
Biological sciences	7	.96	2	.60	91	1.22
Math, computer sciences, physical sciences	8	.80	2	.30	91	.84
Social sciences	2	.33	2	.26	96	.45
History	2	.81	-	-	98	.81
Humanities	4	.59	1	.26	94	.70
Psychology	5	.71	1	.39	94	.86
Other fields*	3	.29	1	.14	97	.34
Age in December 1991						
20-23	4	.32	1	.16	94	.40
24-25	3	.15	1	.11	96	.17
26 and older	2	.21	1	.11	97	.24
Highest degree graduate expects to obtain						
Bachelor's degree	-	.09	-	.06	100	.12
Master's degree	2	.13	1	.08	97	.18
Doctoral degree	11	.55	3	.37	86	.72
First-professional degree	4	.44	1	.20	96	.53

*Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

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APPENDIX B

TECHNICAL NOTES

APPENDIX B. TECHNICAL NOTES

The Recent College Graduates Study is designed to describe the educational and occupational experiences of U.S. bachelor's and master's degree recipients approximately 1 year after graduation. For the 1991 survey (RCG:91), a sample of graduates who received a bachelor's or master's degree between July 1989 and June 1990 were interviewed about their employment and educational status approximately 1 year after graduation. For the employment question the reference was the week of April 22, 1991. The sample of approximately 18,000 graduates consisted of 16,000 bachelor's degree recipients and 2,000 master's degree recipients. Surveys were collected by telephone, using Computer Assisted Telephone Interviewing (CATI). The type of data collected included information about the degree received (major, minor, and grade point average), additional education after receipt of the degree, employment experience, relationship of degree to current job, teacher certification and employment, background, and financial support to attend school.

Sample Design

The RCG:91 survey used a two-stage sample design, with a sample of 400 institutions in the first stage, and a sample of 18,000 graduates from the institutions in the second stage.

Institution Sampling. The frame consisted of institutions from the 1988-89 IPEDS Completions tape that satisfied the following criteria: (1) the institution had a FICE code (i.e., was a "higher education institution," accredited at the college level by an agency recognized by the U.S. Secretary of Education); (2) the institution was in one of the 50 states or the District of Columbia; (3) the institution was a 4-year (or above) institution; and (4) the institution reported a positive number of bachelor's or master's degrees.

Table B-1 shows the total number of eligible institutions in the universe and the institution sample sizes, broken down by the six institutional strata. These universe totals came from the 1988-89 IPEDS completions file (the file from which the institution sample was selected).

Table B-1. Total number of eligible institutions in the universe* and the institution sample sizes, broken down by the six institutional strata

Institutional strata	Universe total*	Sample size
Total	1,978	400
Public institutions (bilingual strata)	45	27
Public institutions (education strata)	252	174
Other public institutions	259	58
Private institutions (bilingual strata)	38	15
Private institutions (education strata)	49	11
Other private institutions	1,335	115

*From the 1988-1989 IPEDS completions file. For IPEDS documentation contact Frank Morgan, U.S. Department of Education, National Center for Education Statistics, 555 New Jersey Avenue, NW, Washington, DC, 20208-5652.

Sample selection within stratum was done systematically with probability proportionate to size. The universe was sorted by stratum, geographic region within stratum, by FIPS state code within stratum and geographic region, and finally by IPEDS Unit ID Code. This sort order ensured geographic dispersion in the sample. The measure of size was designed by NCES to give extra weight to institutions based on the proportion of degrees awarded to blacks. The measure of size can be written as:

MOS = total bachelor's and master's degrees (if < 100 it was set to 100) + (750 * proportion of degrees to black graduates)

The factor of 750 was determined empirically to give substantial added emphasis to black graduates, while reducing the overall efficiency of the sample by less than 10 percent.

Within-Institution Sampling. The second stage of the sampling process selected graduates within the institutions. Each of the participating sampled institutions sent a list of all their 1989-90 bachelor's and master's degree recipients, either on paper or in a computer file. Institutions were requested to include degree (bachelor's/master's), major field of study, and race/ethnicity on their lists. These lists were provided in a variety of formats, such as magnetic tapes, diskettes, printouts, and commencement programs. All lists were edited to verify that they included all eligible graduates and to delete any ineligibles. As part of this editing process, counts of the numbers of bachelor's and master's degree recipients for each school were compared to those reported to IPEDS. Discrepancies of 20 percent or more were clarified by telephone followup to the school.

After being edited, files obtained in computer-readable form (tapes and diskettes) were copied into a standard format for sampling by computer. For lists received on paper, sampling was more complicated. Since different sampling rates were used according to major and race/ethnicity, drawing the samples entirely by hand would have meant an involved process of identifying the correct stratum for each graduate on the list, and applying different sampling rates for each stratum. To avoid this difficulty, paper lists were sampled in steps. First, a sample was drawn by hand from the entire list at the highest rate to be applied within that school. The highest rate for a school was calculated as three times the school base rate. Second, information for this initial sample (including major and race/ethnicity) was keyed and verified. Third, this keyed file was sub-sampled by computer to obtain the appropriate sampling rate for each graduate stratum.

For sampling, each graduate was classified into one of seven strata. All master's degree recipients were in one stratum, and bachelor's degree recipients were divided into the following strata: (1) black graduates; (2) Hispanic graduates, (3) education majors who were not black or Hispanic; (4) math majors who were not black or Hispanic; (5) physical science majors who were not black or Hispanic; and (6) all other graduates.

A systematic sample of graduates was selected by stratum. The base rates for bachelor's and master's degree graduates were derived by taking the desired sample size and dividing by the number of graduates from all institutions in the universe. Over-sampling was done to ensure adequate sample sizes for groups of interest. Bachelor's degree black and Hispanic graduates were over-sampled at three times the base rate. Bachelor's degree education majors were over-sampled at two and a half times the base rate. Finally, bachelor's degree math and physical sciences majors were over-sampled at two times the base rate. Table B-2 shows the total number of graduates from the 1989-90 IPEDS completions file and the sample sizes achieved, broken down by the seven graduate strata.

Data Collection and Response Rates

The first data collection activity was to collect lists of bachelor's and master's degree recipients from the sampled colleges and universities. Of the 400 sampled schools, 378 sent usable lists, 20 were nonrespondents, and 2 were ineligible for the study. Both the unweighted and weighted response rates were 95.0 percent for schools.

Table B-2. Total number of graduates from the 1989-90 IPEDS completions file, and the graduate sample sizes achieved, broken down by the seven graduate strata

Graduate Strata	Universe Total*	Sample Size
Total	1,373,501	18,135
Master's graduates	323,844	1,963
Bachelor's, nonblack non-Hispanic:		
Education majors	97,621	2,919
Math majors	13,536	343
Physical sciences majors	15,030	357
All other majors	832,591	10,101
Bachelor's, black graduates	59,193	1,743
Bachelor's, Hispanic graduates	31,686	709

*From the 1989-90 IPEDS completions file.

Of the participating institutions, 72 percent were able to supply race/ethnicity data for at least some of their graduates. Of the sampled graduates, 64 percent had race/ethnicity identified by the institution prior to sampling.

Once the graduate sample was selected from the lists, flyers were mailed to the sampled graduates requesting their participation in the study and asking for updated address and telephone number information. While earlier cycles of RCG conducted data collection using mail with telephone followup, the 1991 survey conducted data collection primarily by telephone, using the computer assisted telephone interviewing (CATI) system. In RCG:91, collection of questionnaires by mail was used only for graduates with unlisted numbers, those without telephones, and telephone refusals. A total of 124 surveys were completed by mail in RCG:91. Using the telephone as the primary data collection mode allowed earlier identification of graduates needing tracing, and reduced the need for data retrieval.

As shown in Table B-3, the survey sample contained 18,135 graduates. Of these, 14,405 completed questionnaires, 2,930 were nonrespondents, and 800 were ineligible. This resulted in an unweighted graduate response rate of 83.1 percent. The weighted graduate response rate (calculated as the weighted number of completes divided by the sum of the weighted number of completes and nonrespondents) is 83.2 percent. For bachelor's degree recipients the weighted response rate is 83.6 percent, and for master's degree recipients, it is 82.0 percent. The weighted overall response rate (percent of all graduates represented by our sample) is calculated as the school response rate times the graduate response rate (.95 x .832 = .79).

Editing and Item Nonresponse Imputation

Most editing checks were included within the CATI system, including range checks, skip pattern rules, and logical consistency checks. Skip patterns were controlled by the CATI system so that inappropriate items were avoided. For logical

Table B-3. Number of sampled graduates and weighted response rates by graduate and institution characteristics

Graduate and institution characteristic	Number of sampled graduates by status				Weighted graduate response rate[2]
	Total	Complete	Non-response	Ineligible[1]	
Total	18,135	14,405	2,930	800	83.2%
Degree[3]					
Bachelor's	16,172	12,898	2,608	666	83.6%
Master's	1,963	1,507	322	134	82.0%
Gender[4]					
Male	7,568	6,236	1,332	-	82.8%
Female	9,767	8,169	1,598	-	83.7%
Not coded	800	-	-	800	-
Major for bachelor's degree recipients[5]					
Education	3,109	2,630	381	98	87.3%
Mathematics	379	325	43	11	87.8%
Physical sciences	388	316	55	17	85.6%
Other	12,296	9,627	2,129	540	83.1%
Race/ethnicity for bachelor's degree recipients[5]					
American Indian/Native Alaskan	38	31	6	1	83.9%
Asian/Pacific Islander	386	270	85	31	75.8%
Black, non-Hispanic	1,743	1,187	484	72	70.9%
Hispanic	709	544	128	37	80.6%
White, non-Hispanic	8,803	7,425	1,076	302	86.7%
Not reported	4,493	3,441	829	223	80.2%
Institution control					
Public	12,340	9,794	2,027	519	82.8%
Private	5,795	4,611	903	281	84.1%
Institution size					
Enrollment less than 1,500	7,617	6,134	1,170	313	84.6%
Enrollment 1,500-5,999	8,549	6,715	1,441	393	82.4%
Enrollment 6,000 or more	1,969	1,556	319	94	82.2%

[1]The 800 ineligibles include graduates that did not receive their degree within the time frame (375), those living outside the country (368), those that received a degree other than bachelor's or master's (27), deceased or incapacitated (25), and duplicates (5).

[2]The weighted response rate is the weighted number of completed surveys divided by the sum of the weighted number of completed surveys and nonrespondents.

[3]The degree codes are those reported by institutions for the entire sample and may not match data reported by the respondents on the survey.

[4]For respondents, the gender code was taken from the survey data. For nonrespondents, the gender was coded from the name. For ineligibles, the gender was not coded, since it was not needed to calculate response rates.

[5]The major and race/ethnicity codes are those reported by institutions for all bachelor's degree recipients and may not match data reported by the respondents on the survey. These items were collected from institutions for bachelor's degree recipients only, since they were not needed for sampling master's degree recipients. Therefore, the columns for major and race/ethnicity will sum to the bachelor's degree totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *1991 Recent College Graduates Survey*.

consistency check violations, a special CATI screen appeared that explained the discrepancy, displayed responses to the relevant items, and allowed the interviewer to enter a correction. Some additional logical consistency checks were made during the data preparation operation, and all edit checks were rerun after item nonresponse imputation was completed.

Item nonresponse occurred when a graduate cooperated in the survey but did not answer one or more survey questions. Since the study was collected by telephone, only a small amount of item nonresponse occurred. Item response rates for the questionnaire items included in this report appear in Table B-4. Imputation for item nonresponse was performed for each survey item to make the study results simpler to present and allow consistent totals to be obtained when analyzing different questionnaire items. Imputation was performed using a "hot-deck" procedure. Hot-deck methods estimate the missing value of an item by using value(s) of the same item from other record(s) in the same file. Using the hot-deck procedure, each missing questionnaire item was imputed separately. First, respondent records were sorted by items thought to be related to the missing item. Next, a value was imputed for each item nonresponse "recipient" from a respondent "donor" within the same subgroup. The results of the imputation procedure for each item were reviewed to ensure that the imputation plan had been followed correctly. In addition, all edit checks were run on the imputed file to be sure that no data inconsistencies were created by imputation.

Table B-4. Questionnaire item response rates for items included in this report. Item response rates were calculated as the weighted number of respondents (R) who answered a given item divided by the weighted number of respondents for whom the item was applicable

QUESTION	WEIGHTED ITEM RESPONSE RATE (PERCENT)	DESCRIPTION
Q4	100.0	Was this degree bachelor's or mas er's
Q6	100.0	Major field of study
Q12	100.0	Has R attended school since degree
Q22	99.9	Was R attending full or part time
Q23	99.8	Was R working for pay in reference week
Q24	99.4	Was R looking for work in reference week
Q25	99.2	Was R available to work in reference week
Q27	99.9	Type of business or industry
Q28	99.9	Occupation
Q29	99.8	Duties on job
Q32	99.8	Was this job full time or part time
Income (Q37,Q39,Q87c)	94.3	Income from principal job
Q38	99.4	Hours/week R usually employed at job
Q42	99.0	Was college degree required for main job
Q43	99.7	How close was major related to main job
Q45	99.6	What best describes job/career on Apr 22
Q90	99.5	Date of birth of respondent
Q91	100.0	Gender of respondent
Q94	99.9	Is R of Hispanic origin
Q95	98.1	What is R's race

Sampling Errors

The findings in this report are estimates based on the sample selected and, consequently, are subject to sampling variability. If the interviews had been conducted with a different sample, the responses would not have been identical; some figures might have been higher, while others might have been lower.

The standard error is a measure of the variability of estimates due to sampling. It indicates the variability of a sample estimate that would be obtained from all possible samples of a given design and size. Standard errors can be used as a measure of the precision expected from a particular sample. Appendix A contains standard errors for each estimate included in this report.

If all possible samples were surveyed under similar conditions, intervals within plus or minus 1.96 standard errors of a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is the 95 percent confidence interval. For example, the estimated mean annual salary for business and management majors working full time is $24,727, and the estimated standard error is $324. The 95 percent confidence interval for the statistic extends from:

$24,727 - ($324 x 1.96) to $24,727 + ($324 x 1.96)
= $24,092 to $25,362

This means that one can be confident that intervals constructed in this way contain the true population parameter 95 percent of the time.

Estimates of standard errors were computed using a technique known as jackknife replication. As with any replication method, jackknife replication involves constructing a number of subsamples (replicates) from the full sample and computing the statistic of interest for each replicate. The mean square error of the replicate estimates around their corresponding full sample estimate provides an estimate of the sampling variance of the statistic of interest. To construct the replications, 50 stratified subsamples of the full sample were created. Fifty jackknife replicates were then formed by deleting one subsample at a time from the full sample. WESVAR, a proprietary computer program available at Westat, was used to calculate the estimates of standard errors.

Tests of Statistical Significance

The comparisons in the text have all been tested for statistical significance to ensure that the differences are larger than those that might be expected due to sampling variation. All differences cited in the text or marked with an asterisk (*) in the figures are significant at the 5 percent level of significance with pair-wise t tests using a Bonferroni adjustment to the critical value for multiple comparisons. The following is a description of the procedures used to test significance including the Bonferroni adjustment for multiple comparisons.

The student's t statistic can be used to test the likelihood that the differences between two percentages are larger than would be expected by sampling error.

$$t = \frac{P_1 - P_2}{\sqrt{se_1^2 + se_2^2}}$$

where P_1 and P_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.

The significance of the difference between the overall mean (i.e., the mean of the entire population) and a subgroup mean (e.g., between the mean salary of all graduates and the mean salary of graduates in a particular major) was tested using a t-test in which the standard error of the difference was adjusted for the covariance between the subgroup and the total group. The exact formula for the appropriate t-test is

$$t = \frac{\bar{X}_s - \bar{X}_T}{[se_s^2 + se_t^2 - 2(p)\, se_s^2]^{1/2}}$$

where $\bar{X}_s$ and se_s are the mean and standard error for the subgroup; $\bar{X}_T$ and se_T are the mean and standard error for the total group; and p is the proportion of the total group contained in the subgroup.

As the number of comparisons on the same set of data increases, the likelihood that the t value for at least one of the comparisons will exceed 1.96 simply by chance, when in fact there is no difference in the underlying population, increases. For a single comparison, there is a 5 percent chance that the t value will exceed 1.96 due to chance. For five tests, the risk of getting at least one t value that high increases to 23 percent, and for 20 comparisons, to 64 percent.

One way to compensate for this danger when making multiple comparisons is to adjust the alpha level to take into account the number of comparisons being made. For example, rather than establishing an alpha level of 0.05 for a single comparison, the alpha level is set to ensure that the likelihood is less than 0.05 that the t value for any of the comparisons exceeds the critical value by chance alone when there are truly no differences for any of the comparisons. This Bonferroni adjustment is calculated by taking the desired alpha level and dividing by the number of possible comparisons, based on the variable(s) being compared. The t value corresponding to the revised, lower alpha level must be exceeded in order for any of the comparisons to be considered significant.

To test for differences using the Bonferroni adjustment to the alpha level the following steps would be involved.

- Establish the number of comparisons
  - In the case of comparisons between subgroups, for example the unemployment rate of whites, blacks and Hispanics, the number of comparisons would be three (whites and blacks; whites and Hispanics; and blacks and Hispanics). The number of two-way comparisons that can be made equals [(n)(n-1)]/2 where n is the number of variable categories. Thus, with three categories the number of possible comparisons is [(3)(2)]/2 = 3.
  - In the case of comparing a subgroup estimate to the estimate for the total (rather than comparing estimates between subgroups, as above), the number of comparisons equals the number of subgroups. For example, to compare the difference between the mean salary of each of major fields with the mean salary for the total graduates, the number of comparisons is 11, one for each of the major field categories. (Health; engineering; math, computer science and physical science; business/management; social sciences; history; biological science; public affairs/social services; psychology; education; and humanities are each compared to the national average.)
- Divide the desired alpha level, 0.05, by the number of comparisons to obtain the new alpha level. In the first example this would be 3 (0.05/3 = 0.0166); in the second example this would be 11 (0.05/11 = .0045).
- Consult table of t statistics (or the standard normal table for z values if the N is large) to find the t value that corresponds to the alpha level (in the first example t = 2.39 for alpha = 0.0166; in the second example t = 2.85 for alpha = 0.0045).

All comparisons in this report were tested using the Bonferroni adjustments for the t tests.

Design Effects

The design effect is the ratio of the variance of an estimate computed from the sample to the variance that would have been obtained if a simple random sample had been selected. In effect, the design effect indicates the impact of the sample design on the precision of the estimates. Design effects greater than unity indicate that the sample design resulted in increases in the variance due to factors such as clustering of the sample, differential sampling rates, or other adjustments in

the design and estimation stages of the sample. Table B-5 contains design effects and root design effects for selected classification variables included in this report. The RCG survey has a clustered sample with many graduates being sampled from the same sample institution. While this method of sampling is very cost effective, clustering generally results in design effects that are greater than unity.

Nonsampling Errors

In addition to sampling errors, the survey estimates are also subject to nonsampling errors that can arise because of nonobservation (nonresponse or noncoverage), reporting errors, and errors made in the collection and processing of data. These errors can sometimes bias the data. The RCG:91 survey included procedures for both minimizing and measuring nonsampling errors.

Procedures to minimize nonsampling errors were followed throughout the survey. Extensive questionnaire design and testing was conducted, including two types of pretests: (1) the questionnaire was pretested informally with several recent college graduates before the CATI survey was finalized; and (2) a formal CATI pretest was conducted with part of the main study sample of graduates. Strict training and monitoring of telephone interviewers and data processing staff was conducted to help ensure the consistency and accuracy of the data file. Data collection was conducted almost entirely by telephone to help reduce the amount of item nonresponse and item inconsistency. Mail questionnaires were used for cases difficult to complete by telephone (unlisted numbers, those without telephones, and telephone refusals). Nonresponse was handled in ways designed to minimize the impact on data quality (i.e., through weighting adjustments by strata for questionnaire nonresponse, and through hot deck imputation for item nonresponse).

While general sampling theory can be used to estimate the sampling variability of a statistic, the measurement of nonsampling errors is not easy, and usually requires that an experiment be conducted as part of the data collection procedures, or that data external to the study be used. For RCG:91, an evaluation study was conducted to measure some of the potential nonsampling errors associated with the survey. The Evaluation Study consisted of three sub-studies: (1) Response Validity - the external validity of responses to items concerning teacher certification compared to data from state certification agencies; (2) Response Reliability - the reliability of responses to a select number of key items; and (3) Nonresponse Analysis.

For the response reliability study, a sample of 583 respondents was drawn to be re-asked selected questionnaire items. Of these, 512 completed the reinterview, for a response rate of 88 percent. Table B-6 shows the comparisons of reinterview and main study data for items in this report. Results are reported as the gross difference rate and the net difference rate.

The gross difference rate is the weighted percent of cases that were reported differently in the original and reinterview surveys. For example, question 43 (Was the respondent's job related to major field of study) has a gross difference rate of 6.91. This means that 6.91 percent of the respondents answered differently on the reinterview than they did on the original interview. The net difference is the difference between the total number of respondents with a characteristic as reported in the reinterview and the total number as reported in the original interview. It includes off-setting differences. The net difference rate is the ratio of the net difference to the total number of reinterviews. It is useful in determining the direction of bias. For example, the net difference rate for the question cited above (relationship of job to major) was only 2.51. This indicates that for this question, 2.51 percent more graduates responded that their job was related to their major on the original than did on the reinterview survey.

Table B-5. Design effects and root design effects for 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics

Characteristic	Sample Size	Design Effect	Root Design Effect
Gender			
Male	5,564	*	*
Female	7,324	*	*
Race/ethnicity			
Native American	63	0.97	0.98
Asian	392	0.83	0.91
Black, non-Hispanic	1,379	3.50	1.87
Hispanic	753	1.67	1.29
White, non-Hispanic	10,301	2.91	1.71
Major field of study			
Professional fields	7,009	3.01	1.73
Arts and sciences fields	4,476	3.07	1.75
Other fields**	1,403	1.59	1.26
Major field of study			
Business/management	2,682	3.30	1.82
Education	2,361	*	*
Engineering	849	7.94	2.82
Health profession	754	7.08	2.66
Public affairs/social service	363	1.76	1.33
Biological sciences	490	0.96	0.98
Math, computer sciences, physical sciences	984	3.05	1.75
Social sciences	1,102	1.81	1.34
History	237	0.95	0.98
Humanities	1,069	3.30	1.82
Psychology	594	1.28	1.13
Other fields**	1,403	1.59	1.26
Age			
20-23	3,331	4.27	2.07
24-25	5,043	1.84	1.36
26 and older	4,514	5.43	2.33

Table B-5. Design effects and root design effects for 1989-90 bachelor's degree recipients 1 year after graduation, by graduate characteristics (continued)

Characteristic	Sample Size	Design Effect	Root Design Effect
Educational expectations			
Bachelor's degree	1,987	1.16	1.08
Master's degree	8,147	1.09	1.04
Doctoral degree	1,830	1.19	1.09
First-professional degree	924	1.48	1.22
Occupation			
Business/Managers	1,350	0.97	0.98
Educators	1,946	0.61	0.78
Engineers	526	5.62	2.37
Health professionals	588	5.05	2.25
Public affairs/social services	346	1.17	1.08
Biological scientists	224	0.90	0.95
Math and physical scientists	135	0.66	0.81
Computer scientists and programmers	402	2.32	1.52
Communications	169	0.88	0.94
Writers, artists, etc.	174	1.73	1.31
Technicians	286	1.08	1.04
Administrative support/clerical	1,551	0.85	0.92
Crafts/operators/laborers	312	1.58	1.26
Sales personnel	884	1.14	1.07
Service personnel	429	0.55	0.74
Other	151	3.27	1.81

*Design effects are zero due to poststratification by these variables.

**Other fields includes agriculture and natural resources, architecture and environmental design, area and ethnic studies, communications, consumer/personal/miscellaneous services, home economics, industrial arts, law, liberal/general studies, library and archival sciences, military sciences, multi/interdisciplinary studies, personal and social development, and trade and industrial.

Table B-6. Reinterview results for key items included in this report

	Item	Unweighted number of cases**	Gross difference rate	Net difference rate
Q6	Major field of study (12 classifications used in report)*	512	3.17%	0.60%
Q12	Has R enrolled since receiving degree	512	6.91	-2.73
Q23	Was R working for pay in reference week	510	2.31	0.73
Q24	Was R looking for work in reference week	66	15.12	0.14
Q25	Was R available for work in reference week	67	5.09	1.23
Q28	Occupation*	423	2.56	0.18
Q32	Was this job full time or part time	423	5.14	1.24
Q39	Annual income rounded to $2,000	398	14.97	3.13
	Annual income rounded to $4,000	398	8.54	2.75
	Annual income rounded to $5,000	398	6.51	1.02
Q42	Was college degree required for job*	419	11.68	-2.30
Q43	Was job related to major (classified in two categories)*	423	6.91	2.51
Q45	Does job have career potential (classified in two categories)*	423	10.28	0.61
Q94	Is R of Hispanic origin*	510	0.46	-0.26
Q95	What is R's race*	500	1.05	0.17

*Unreconciled results reported. All others represent reconciled results.

**The unweighted number is the number of cases where the item was applicable and reported for both the main interview and the reinterview.

APPENDIX C

DEFINITIONS OF TERMS AND CODES USED IN THIS REPORT

APPENDIX C. DEFINITIONS OF TERMS AND CODES USED IN THIS REPORT*

1. **LABOR FORCE STATUS**: Graduates were asked whether they were working for pay during the week of April 22, 1991. Graduates who answered "no" to this question were asked whether they were looking for work, and whether they were available for work during that week. Based on the responses to these questions, the following labor force status categories were formed:

   - **Employed**: Graduates who said "yes," they were working for pay during the week of April 22, 1991 (Q23). This category is divided into those working full time and those working part time, based on the response to question 32.
   - **Not employed but looking for work**: Graduates who were not working for pay (Q23), but were looking for work during the week of April 22, 1991 (Q24).
   - **Not employed and not looking for work**: Graduates who were not working for pay (Q23), and were not looking for work during the week of April 22, 1991 (Q24).

   The following unemployment categories were formed:

   - **Unemployment percent**: The percent of the total graduates who were not working.
   - **Unemployed rate**: The percent of graduates in the labor force who were not working. The labor force is defined as graduates who were either working or not working and both looking for and available for work in the reference week.

   Relevant Questionnaire Items:

   Question 23. Please think back to April 22 1991. Were you working for pay during this <u>week?</u> Please include any paid job from which you were on leave or vacation. Exclude graduate student assistantships and work study (yes/no).
   Question 24. Were you **looking** for work during the week of April 22, 1991 (yes/no)?
   Question 25. Were you **available** for work during the week of April 22, 1991 (yes/no)?
   Question 32. Was this job full time or part time during the week of April 22, 1991 (full-time/part-time)?

2. **ANNUAL SALARY**: There are three survey questions that request salary information. As shown below, question 37 requests annual income information for graduates who were self-employed during the week of April 22, 1991. Question 39 requests salary information for all other graduates working for pay during that week. Question 87C requests annual income information for teachers working under a teaching contract that week. The annual salary estimates used to calculate the means included in this report were created according to the following rules:

   - If the graduate was self-employed, the personal annual income (from Q37) was used.
   - If the graduate was working under a teaching contract, the annual income from that contract (from Q87C) was used.
   - For all other graduates working for pay, the salary rate reported in Q39 was converted to an annual amount, if necessary, using the hours per week reported in Q38.

   Relevant Questionnaire Items:

   <u>Self-employed:</u>
   Question 37. What was your personal annual income from your business before taxes? [ENTER IN DOLLARS]

*A copy of the RCG questionnaire is available from Peter Stowe, U.S. Department of Education, NCES, 555 New Jersey Avenue, NW, Washington, DC, 20208-5652.

Not Self-employed:

Question 38. How many hours per week were you usually employed at this job?
[PLEASE INCLUDE ONLY THOSE HOURS FOR WHICH RESPONDENT IS PAID]

Question 39. At what rate (before deductions) were you paid on this job?
AMOUNT: _____
PER: HOUR/DAY/WEEK/MONTH/YEAR

Teachers under contract:

Question 87C. What was your annual income from the principal teaching contract under which you were working on April 22, 1991? [ENTER IN DOLLARS]

3. **JOB RELATED TO MAJOR FIELD OF STUDY**: Graduates who indicated that their jobs were closely or somewhat related to their major fields were included in this category.
Relevant Questionnaire Item:

Question 43. To what extent was your work on this principal job related to your major field of study for your 1989-90 degree. Was it ...

Closely related, ...	1
Somewhat related, or	2
Not related	3

4. **JOB HAS CAREER POTENTIAL**: Graduates who indicated that their job had definite or possible career potential were included in this category.
Relevant Questionnaire Item:

Question 45. Which of the following statements best describes the principal job you held on April 22, 1991 with regard to career potential?

A job with definite career potential, .	1
A job with possible career potential, or	2
A temporary or permanent job without much career potential?	3

5. **DEGREE NOT REQUIRED FOR JOB**: Graduates who indicated that a 4-year college degree was not required to obtain their job were included in this category.
Relevant Questionnaire Item:

Question 42. Was a 4-year college degree required in order to obtain your principal job during the week of April 22, 1991? (yes/no)

6. **UNDEREMPLOYED**: Graduates who indicated that a college degree was not required for their job and are employed full time in sales, service, administrative support/clerical, or crafts/operators/laborers. The relevant questionnaire items are question 42 as shown above, and occupation, as shown in definition 11.

7. **ENROLLMENT IN FURTHER EDUCATION:** Graduates who indicated that they attended school since receiving their 1989-90 degree were included in this category. This category is divided into those working (Q23 = yes) and those not working (Q23 = no). It is also divided into those enrolled full time (Q22 = full-time) and enrolled part time (Q22 = part-time).
Relevant Questionnaire Item:

Question 12. Have you attended school at any time since receiving the 1989-90 degree? (yes/no)
Question 22. Are/were you attending school part time or full time? (full-time/part-time)

8. **RACE/ETHNICITY**: Two survey questions were used to determine race/ethnicity. All graduates were asked whether they were of Hispanic or Spanish origin, and what race they considered themselves. Based on the responses to these questions, graduates were coded into the following categories:

- American Indian/Native Alaskan (If Q94=no and Q95=4)
- Asian or Pacific Islander (If Q94=no and Q95=3)
- Black, non-Hispanic (If Q94=no and Q95=2)
- Hispanic (If Q94=yes)
- White, non-Hispanic (If Q94=no and Q95=1)

Relevant Questionnaire Items:

Question 94. Are you of Hispanic or Spanish origin? (yes/no)

Question 95. What race do you consider yourself?

White [CAUCASIAN] 1
Black [AFRICAN AMERICAN] 2
Asian or Pacific Islander 3
Native American or Alaskan Native
[AMERICAN INDIAN] 4

9. **EDUCATIONAL EXPECTATIONS**: In question 101, graduates were asked to report the highest level of education that they expect to complete. Based on responses to this question, graduates were coded into the categories listed below. If Q101 was answered "Other certificate/award," then graduates were coded according to their 1989-90 degree (reported in Q4).

- Bachelor's degree (Q101 = 1 or 2)
- Master's degree (Q101 = 3 or 4)
- Doctoral degree (Q101 = 5)
- First-professional degree (Q101 = 6)

Relevant Questionnaire Item:

Question 101. What is the highest level of education you <u>expect</u> to complete?

BACHELOR'S DEGREE 1
POST-BACCALAUREATE CERTIFICATE 2
MASTER'S DEGREE 3
POST-MASTER'S CERTIFICATE 4
DOCTORAL DEGREE (PH.D. OR ED.D.) 5
FIRST PROFESSIONAL DEGREE 6
OTHER CERTIFICATE/AWARD (SPECIFY) 91

10. **MAJOR FIELD OF STUDY**: Graduates were asked to report their major field of study for their 1989-90 degree. Response categories for this question were precoded with the most common majors. Any major that did not fit into these precoded categories was entered verbatim into the other (specify) field. These responses were then coded at the two-digit level into the Classification of Instructional Program (CIP) codes as shown in exhibit C-1. For analysis, majors were grouped into the following categories:

Professional fields	CIP CODES CROSSWALK*
Business and management	06, 07, 08
Education	13
Engineering	14, 15
Health professions	17, 18
Public affairs/social services (protective services, parks and recreation)	43, 44
Arts and sciences fields	
Biological sciences (life sciences)	26
Mathematics, computer sciences,and physical sciences	27, 11, 40, 41
Social sciences	45
History	45, 08
Humanities (foreign languages, letters, philosophy, religion, theology, visual and performing arts)	16, 23, 28, 38, 39, 50
Psychology	42
Other fields	
All other fields are grouped into one category, and include the following:	
Agriculture and natural resources	01, 02, 03
Architecture and environmental design	04
Area and ethnic studies	05
Communication	09, 10
Consumer, personal, and miscellaneous services	12
Home economics	19, 20
Industrial arts	21
Law	22
Liberal/General studies	24
Library and archival sciences	25
Military sciences	28, 29
Multi/Interdisciplinary studies	30
Personal and social development	32-37
Trade and industrial	46-49

*See Exhibit C.

Relevant Questionnaire Item:

Question 6. What was your major field of study for your 1989-90 {BACHELOR'S/MASTER'S} degree? [CODE ONLY ONE: IF RESPONDENT STATES FIELD NOT **VERBATIM** ON LIST, CODE 91 OTHER]

Exhibit C-1. Classification of Instructional Program (CIP) codes used for coding major field of study on RCG:91*

Agriculture
- 01. Agribusiness and Agricultural Production
- 02. Agricultural Sciences
- 03. Renewable Natural Resources

Architecture and Environmental Design
- 04. Architecture and Environmental Design

Area and Ethnic Studies
- 05. Area and Ethnic Studies

Business
- 06. Business and Management
- 07. Business and Office
- 08. Marketing and Distribution

Communications
- 09. Communications
- 10. Communications Technologies

Computer and Information Sciences
- 11. Computer and Information Sciences

Consumer, Personal, and Miscellaneous Services
- 12. Consumer, Personal, and Miscellaneous Services

Education
- 13. Education

Engineering
- 14. Engineering
- 15. Engineering and Engineering-Related Technologies

Foreign Languages
- 16. Foreign Languages

Health
- 17. Allied Health
- 18. Health Sciences

Home Economics
- 19. Home Economics
- 20. Vocational Home Economics

Industrial Arts
- 21. Industrial Arts

Law
- 22. Law

Letters
- 23. Letters

Liberal/General Studies
- 24. Liberal/General Studies

Library and Archival Sciences
- 25. Library and Archival Sciences

Life Sciences
- 26. Life Sciences

Mathematics
- 27. Mathematics

Military Sciences
- 28. Military Sciences
- 29. Military Technologies

Multi/Interdisciplinary Studies
- 30. Multi/Interdisciplinary Studies

Parks and Recreation
- 31. Parks and Recreation

Personal and Social Development
- 32. Basic Skills
- 33. Citizenship/Civic Activities
- 34. Health-related activities
- 35. Interpersonal skills
- 36. Leisure and Recreational Activities
- 37. Personal Awareness

Philosophy, Religion, and Theology
- 38. Philosophy and Religion
- 39. Theology

Physical Sciences
- 40. Physical Sciences
- 41. Science Technologies

Psychology
- 42. Psychology

Public Affairs and Protective Services
- 43. Protective Services
- 44. Public Affairs

Social Sciences
- 45. Social Sciences
- 45.08 History

Trade and Industrial
- 46. Construction Trades
- 47. Mechanics and Repairers
- 48. Precision and Production
- 49. Transportation and Material Moving

Visual and Performing Arts
- 50. Visual and Performing Arts

*A more complete discussion of instructional programs is found in 1990 edition of Classification of Instructional Programs available from the Superintendent of Documents, U.S. Government Printing Office, Washington D.C. 20402

11. **OCCUPATION**: The graduate's occupation during the week of April 22, 1991 was coded from the verbatim responses to three questions: (1) the type of business, industry, or organization; (2) the type of work; and (3) the major job duties. Exhibit C-2 contains a list of the RCG:91 occupation codes, along with the corresponding Standard Occupational Classification (SOC) codes, and the codes used in the 1987 RCG survey. For analysis, occupations were grouped into the following categories:

Occupation	RCG:91 Code
Business/managers	A, A1
Educators	E22-E24
Engineers	B, B1, B2
Health professionals	F26-G30, I
Public affairs/social services	D19, D20
Biological scientists	C1, N
Math and physical scientists	C
Computer scientists and programmers	C171, C172
Communications	H1
Writers, artists	H
Technicians	J37-J39
Administrative support/clerical	L
Mechanics, operators, laborers	O-T
Sales personnel	K
Service personnel	M
Other	D21,E25,U,V

Relevant Questionnaire Items:

Question 27. For what type of business, industry, or organization were you working during the week of April 22, 1991? (FOR EXAMPLE: OUTPATIENT CARE FACILITY, ACCOUNTING FIRM, TELEVISION MANUFACTURER, DAYCARE CENTER, SCHOOL.)

Question 28. What type of work were you doing? (FOR EXAMPLE: REGISTERED NURSE, ELECTRICAL ENGINEER, ACCOUNTANT, SCHOOL GUIDANCE COUNSELOR, SCHOOL TEACHER.)

Question 29. What were your major activities or duties on the job? [FOR EXAMPLE: CARING FOR PATIENTS, AUDITING FIRM'S BOOKS, DESIGNING, WIRING CIRCUITS, ADVISING AND COUNSELING STUDENTS, CARING FOR CHILDREN, TEACHING STUDENTS.]

Exhibit C-2. Occupation codes used for RCG:91, with corresponding Standard Occupational Classification (SOC) codes, and codes used for RCG:87

1991 RCG	OCCUPATION	SOC	1987 RCG
A	Executive, administrative, and managerial occupations(except A1)	11-14	1
A1	Accountants	14	1
B	Engineers, surveyors and architects (except B1 and B2)	16	3
B1	Civil engineers	16	3
B2	Electrical engineers	16	3
C	Natural scientists and mathematicians (except C1,C171/2)	17/18	15
C1	Biologists and life scientists	18	6
C171	Computer scientists	171	7
C172	Computer programmers	171	7
D19	Social scientists and urban planners	19	5
D20	Social, recreation, and religious workers	20	5
D21	Lawyers and judges	21	15
E22	Teachers (college, university and other postsecondary)	22	2
E23	Teachers except postsecondary	23	2
E24	Vocational and educational counselors	24	2
E25	Librarians, archivists, curators	25	15
F26	Physicians and dentists	26	4
F27	Veterinarians	27	4
F28	Other health diagnosing and treating practioners	28	4
G29	Registered nurses	29	4
G30	Pharmacists, dietitians, therapists, and physicians assistants	30	4
H	Writers, artists, entertainers and athletes (except H1)	32,33,34	9
H1	Editors, reporters, public relations, announcers, TV, Radio	33	8
I	Health technologists and technicians	36	4
J37	Engineering and related technologists and technicians	37	10
J38	Science technologists and technicians	38	10
J39	Technicians except health, engineering, and science	39	10
K	Marketing and sales	40-44	13
L	Administrative support occupations including clerical	45,46,47	11
M	Service occupations	50,51,52	14
N	Agricultural, forestry, and fishing	55-58	6
O	Mechanics and repairers	60,61	12
O611	Vehicle and mobile equipment mechanics and repairers	611	12
O615	Electrical and electronic equipment repairers	615	12
P	Construction and extractive occupations	63,64,65	12
Q	Precision production occupations	67,68,69	12
R	Production working occupations	71-78	12
S	Transportation and material moving occupations	81,82,83	12
S821	Motor vehicle operators	821	12
T	Handlers, equipment cleaners, helpers, and laborers	85,86,87	12
U	Military occupations	91	15
V	Miscellaneous occupations	99	15
Y	Housewife	-	16
Z	Unemployed, retired, disabled, or not classifiable	-	16

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